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DISEASES CAUSED BY BACTERIA AND FUNGI

PRISSICK, F. H. (1953). **Antibiotic-resistant staphylococci and related infections.**—*Amer. J. med. Sci.* **225,** 299-317. [Author's summary modified.] 2743

A review on the subject of antibiotic-resistant staphylococci and related infections in man from representative medical literature, drawing attention to the possible ways in which *Staph. pyogenes* may respond to exposure to antibiotics, particularly to penicillin, and to their possible bearing upon therapy. Strains of staphylococcus are becoming resistant to other antibiotics, although at a slower rate. P. discussed the prevalence of antibiotic-resistant staphylococci among the human population, and their comparative frequencies in healthy persons, hospital staff and infant and adult patients. He discussed general measures to assist in the control of cross-infection, the influence of the widespread use of antibiotics on the character of staphylococcus infections, and the clinical and bacteriological problems involved.

CROOK, E. (1951). **Bovine mastitis in Arkansas: a two-year study.**—*Bull. Ark. agric. Exp. Sta.* No. 518. pp. 39. 2744

A total of 5,660 quarter examinations were made on 982 cows in 18 herds. Organisms were isolated from 1,577 quarters. Beta-haemolytic streptococci or beta-haemolytic micrococci were generally associated with the more badly damaged quarters. Non-haemolytic streptococcal and micrococcal infections tended to be transient and C. considers them to be of doubtful pathogenicity.—C. C. BANNATYNE.

HAMBURGER, M. & BIEHL, J. P. (1953). **Some effects of injecting sterile solutions of streptokinase-streptodornase into the subarachnoid space of normal rhesus monkeys.**—*J. clin. Invest.* **32,** 391-393. [Authors' summary modified.] 2745

The injection of sterile solutions of streptokinase and streptodornase into the subarachnoid space of normal rhesus monkeys invoked a marked rise in the polynuclear cell count and a positive Pandy reaction. The white cell counts dropped sharply within a few days and were practically normal within two weeks. The monkeys remained free from symptoms of clinical illness and in those that were killed there was no gross deposition of exudate upon the brain.

PFEIFFER, D. H. & LOUW, A. J. (1952). **An outbreak of anthrax at the municipal abattoir—Bloemfontein.**—*J. S. Afr. vet. med. Ass.* **23,** 157-161. 2746

An account of an outbreak of anthrax in the Bloemfontein municipal abattoir where one of a consignment of steers died overnight. By the time the carcass had been examined and diagnosis made, 73 oxen had been slaughtered, the carcasses inspected and placed in the chilling rooms and distribution of offal to the meat trade had commenced. One apparently healthy carcass was found to be infected (subclinical anthrax). A butcher to whom offal had been consigned became infected. The authors described the tracing of infective material, its disposal and the disinfection and sterilization measures taken, which permitted a return to normal abattoir routine within 48 hours. They discussed the possibility of a recurrence and listed certain recommendations.—F.E.W.

LETROTEUR, R. (1952). Quelques observations sur la tuberculose bovine à Bobo-Dioulasso (Haute-Volta). **[TB. in cattle in French West Africa.]**—*Bull. Serv. Elev. Industr. anim., A.O.F.* **5,** No. 1. pp. 25-32. 2747

L. gave detailed information on TB. found during meat inspection work in French West

NOTE.—*The* V.B. *references given in square brackets now refer to abstract numbers and not to page numbers.*

Africa. Cultural and animal inoculation tests established that the organisms were not of avian type, but did not establish clearly to which mammalian type they belonged.—J.D.

STRAUB, M. (1953). **The double epidemiology of tuberculosis in Scotland and in the Netherlands.**—*Doc. med. geograph. trop.* **5**, 85-92. [In English.] **2748**

S. suggested that, following reduction of the TB. rate in cattle in Scotland and, consequently of the extent to which the milk carries the organisms, the human population has lost a means of immunization, with the result that the morbidity from TB. in human beings has increased. He compared figures of incidence in human beings in Holland and concluded that the continued presence of the organisms in the milk in that country immunizes the population and reduced the morbidity from TB. He considered that study of these factors should be of value in assessing the value of B.C.G. vaccination.

OLSEN, H. C. (1953). **Tuberculosis in Bornholm after B.C.G. vaccination. [Human.]**—*Acta. tuberc. scand.* **28**, 1-30. [In English.] **2749**

An account of later observations on the TB. incidence in the human population of the island of Bornholm, Denmark, following mass immunization with B.C.G. vaccine. The incidence is declining and much of the good result recorded is attributed to the vaccine.

LUKE, D. (1952). **Studies in tuberculous sensitivity in the pig. III. The tuberculin skin reaction in the sow.**—*Vet. Rec.* **64**, 344-345. **2750**

[For previous parts, see *V.B.* **21**, 2814 and **22**, 2354.] Intradermal comparative tuberculin tests were carried out, using standard Weybridge tuberculin for 100 sows and standard retest Weybridge tuberculin (1:1,000 dilution) for 25 sows, the results being read 24 hours after injection. An increase in skin thickness of more than 2 mm. at the site of either or both injections was taken to be a positive reaction. In the first group there were 39 reactors, in 22 of which tuberculous lesions were present. Lesions were also present in 8 of the sows which had given negative reactions. In the second group lesions were present in six, 3 of which were reactors.—R.M.

BAISDEN, L. A., LARSEN, A. B. & VARDAMAN, T. H. (1952). **Comparison of the potencies and specificities of human and bovine tuberculins.**—*Amer. J. vet. Res.* **13**, 338-344. **2751**

Bureau of Animal Industry [BAI] intradermal tuberculins are prepared from human strains of *M. tuberculosis*. These products were compared for their specificity in sensitized g. pigs and cattle with tuberculins prepared from the bovine type. In general, the tuberculins prepared from the bovine type appeared to be more specific in distinguishing sensitization due to the bovine type from that due to human and avian strains of *M. tuberculosis* and to *M. johnei*, and *M. phlei*, but the results were not consistent from one experiment to another.

—R.M.

TISON, F. (1952). Les facteurs néfastes à la culture du bacille de Koch à partir de produits pathologiques. **[Factors preventing the isolation of *Mycobacterium tuberculosis* from pathological material.]**—*Ann. Inst. Pasteur.* **82**, 484-488. **2752**

To overcome inhibiting factors which may hinder the early stages of growth the inoculum should be sown thinly in a large volume of medium. When pus is used as the inoculum it should be diluted before being sown. Centrifuged material should be washed before sowing, and the method of multiple culture should be employed if the culture is needed in quantity.

—W. R. BETT.

FALLIN, J. R., PATNODE, R. A. & HUDGINS, A. K. (1952). **Toxic effect of penicillin on the culture of tubercle bacilli.**—*Amer. J. clin. Path.* **22**, 703-705. **2753**

Penicillin was added to concentrated sputum from tuberculous patients in concentrations of 100–400 units per ml. The number of viable tubercle bacilli was significantly reduced after exposure to penicillin for up to 15 min. Therefore the addition of penicillin as a means of preparing sputum samples for cultural examination may suppress the growth of *M. tuberculosis* when only a few organisms are present in the sample.—R.M.

GREENBURGH, H., ROBSON, J. M. & WILLCOX, D. R. C. (1953.) **The effect of cortisone on experimental corneal tuberculous lesions.**—*Brit. J. Pharmacol.* **8**, 120-124. **2754**

The effects of cortisone upon experimental infection of the cornea in the rabbit with bovine type tubercle bacilli were studied. The lesions were less severe in treated animals than in controls. The systemic administration of an antihistamine (promethazine) did not produce a similar effect. The possible mechanisms of the response were discussed.—A.S.

ESPERSEN, E. (1951). **Studies on streptomycin-resistant strains of the tubercle bacillus. II.** —*Acta path. microbiol. scand.* **29**, 211-220. [In English. Abst. from author's summary.] [For Part I, see *V.B.* **21**, 3145.] 2755

Streptomycin-resistant strains do not exclusively consist of cells with uniform resistance but include also more sensitive organisms. At higher concentrations of streptomycin the more resistant bacilli showed similar morphological changes to those shown by sensitive strains at low concentrations of streptomycin. At the inoculation the resistant cells do not differ morphologically from the more sensitive cells in the culture.

Penicillin had the same bacteriostatic and bacteriolytic effect on streptomycin-resistant strains as on streptomycin-sensitive strains, and produced the same morphological changes in the two types. Sulphathiazole had a bactericidal effect on the streptomycin-resistant strains in concs. of 20–40 mg.%; in concs. of 5–10 mg.% its bacteriostatic and bacteriolytic effects on these strains were identical with those produced on sensitive strains.

The streptomycin resistance was therefore specific.

CHOUCROUN, N., DELAUNAY, A., BAZIN, S. & ROBINEAUX, R. (1951). Effets produits par la phagocytose de bacilles de Koch et par un de leurs constituants lipopolysaccharidiques sur le tactisme leucocytaire *in vitro*. [**Effects produced on leucocytic attraction by the phagocytosis of tubercle bacilli and by their lipopolysaccharides.**]—*C.R. Acad. Sci., Paris.* **232**, 1325-1327. 2756

Phagocytosis of lipopolysaccharides depends on the concentration of micro-organisms including those of non-virulent type, and on contact time, and produces an inhibition of leucocytic attraction similar to that of virulent bacilli.—F. R. HARRIS.

BENOIT, R. & DAPPLES, C. (1952). Granulome de Roeckl. [**Roeckl's granuloma.**]—*Schweiz. Arch. Tierheilk.* **94**, 523-525. [In French. English, German and Italian summaries.] 2757

Roeckl's granuloma was found in the carcass of a cow in which tuberculous lesions of the lungs and pleura were present. The granulomata were distributed in the subcutaneous connective tissue and cutaneous muscle in the neck, shoulder and flank regions, and to a lesser extent in the thigh and back. Each lesion had a thick connective tissue capsule and a yellow caseous centre. Epithelioid and giant cells were present in the periphery of the lesions.—R.M.

DE ANDRADE, L. (1951). Contribuição ão estudo das Micobactérias: fluoromicroscopia e reação citoquímica de Dubos. [**A study of the mycobacteria: fluoromicroscopy and the haemagglutination test.**]—*Mem. Inst. Osw. Cruz.* **49**, 7-32. 2758

These two tests were applied to 123 saprophytic and pathogenic strains of *Mycobacterium*, including mammalian and avian types of tubercle bacilli and *M. leprae*. Human and bovine type strains of *M. tuberculosis* were always readily demonstrable by fluorescence microscopy, but results were very variable with other strains. The haemagglutination test of Middlebrook and Dubos was mostly positive with mammalian strains of tubercle bacilli, but not exclusively so. There was no relationship between the results of the two tests.

—G. P. MARSHALL.

THYGESEN, A. S. (1948). Corynebacterium pyogenes som årsag til ufrugtbarhed hos kvaeg. [*Corynebact. pyogenes* **as a cause of sterility in cattle.**]—*Maanedsskr. Dyrlaeg.* **60**, 197-216. [English summary] 2759

Bacteriological and pathological-anatomical examinations of the genital organs of some 700 slaughtered cows were carried out. Using a pepsin-casein agar described by Jepsen, A. (1944), *C. pyogenes* was isolated from mucus or pus from the uterus and cervix of 91% of the animals. It is probable that the uterus becomes infected with *C. pyogenes* in the *post-partum* period. It is suggested that greater differentiation between strains of this organism should be sought for, with a view to finding a suitable antigenic type. Pending the development of a suitable vaccine, sanitary methods of control must be relied upon, especially at and after parturition.—P. SCHAMBYE.

MANNINGER, R. (1951). Uber eine Methode der aktiven Immunisierung gegen Schweinerotlauf. [**Active immunization against swine erysipelas.**]—*Acta vet. hung.* **1**, 5-22. [In German. Russian summary.] 2760

Two kinds of R variant obtained from smooth cultures of *E. rhusiopathiae* were found to be avirulent, yet to have good immunizing properties. For the preparation of a vaccine the organisms are grown for three days at 38°C. in broth with 10% sheep serum. To a mixture

of cultures 30% of 2% aluminium hydroxide is added, and the bacteria are killed by 0·3% formalin. A 5 ml. dose of this vaccine is sufficient for immunization of pigs. The immunity obtained lasts about six months. Immunization of pigs under four months of age is usually unsuccessful.—A. MAYR-HARTING.

STEFFEN, J. (1951). Biologia i wartość antygenowa niezjadliwego włoskowca różycy świń stauba (*Erysipelothrix rhusiopathiae suum* Staub). [**Biology and antigenic properties of the attenuated swine erysipelas vaccine described by Staub.**]—*Polsk. Arch. Weteryn.* **1,** 345-382. [French and Russian summaries.] 2761

S. found that the greatest number of attenuated organisms could be produced by 24-hour culture in horse-meat broth at pH 7·6 with the addition of 1% peptone and 0·1% glucose. The M.L.D. for mice was found to be about 4 virulent organisms. Mice given a dose of 100 attenuated viable organisms s/c acquired an immunity of short duration in 2 weeks. When larger doses of antigen were given, immunity lasted for 4–6 months.—J. R. MITCHELL.

EVANS, W. M. (1952). **A field case of *Erysipelothrix rhusiopathiae* infection in a flock of chickens.**—*Proc. 24th Ann. Meet. N.E. Conf. lab. Wkrs Pullorum Dis. Contr.* June 19 and 20, (1952). pp. 3. (No pagination.) [Mimeographed.] 2762

E. rhusiopathiae was isolated from the carcass of a year-old fowl from a large flock. The organism had probably been responsible for many deaths, but no source of infection could be found.—F. T. W. JORDAN.

ZIEGER, W. (1952). Ein neuer Fall einer Rotlaufenzootie bei Enten. [*Erysipelothrix rhusiopathiae* **infection in ducks.**]—*Dtsch. tierärztl. Wschr.* **59,** 243-245. 2763

An account of an outbreak of *E. rhusiopathiae* infection in which 30 out of 50 six-week-old ducklings died from septicaemia. —R.M.

DEDIÉ, K. (1950). Zur Differenzierung der Rotlaufbakterien nach ihren Eigenschaften in vitro. [**Differentiation of *Erysipelothrix rhusiopathiae* strains *in vitro.***]—*Exp. Vet.-Med.* **2,** pp. 56-66. 2764

Two hundred strains were first classified into A, B, or N variants by the method described by Dedié [*V.B.* 20, 1573] according to the presence of acid-soluble precipitating antigen. Group A formed haemagglutinating antigens only in the presence of serum, while Group B did this in broth as well. Those strains of group B which showed good immunizing properties did not agglutinate spontaneously when mixed with water, whereas all other A, B, and N strains did. A and B are considered identical with groups I and II of Watts, and are serologically well characterized. N strains are not thus characterized and may be variants of A or B with faulty antigenic structure.—R.M.

TAJIMA, M. (1950). [**Pathological studies on encephalomyelitis in domestic animals. II. Listerellosis-like malady in goats occurring in Japan.**]—*Jap. J. vet. Sci.* **12,** 241-246. [English summary pp. 247-248.] 2765

T. reported two fatal cases of what appeared to be *Erysipelothrix* (*Listeria*) *monocytogenes* infection. He described the type of illness, the lesions, and the organisms he isolated.

HYOGO, Y. & KATO, H. (1951). [**A disease in a goat, resembling listeriosis.**]—*J. Jap. vet. med. Ass.* **4,** 338-339. [In Japanese.] 2766

A 3-year-old goat died after an illness involving paralysis of the face, tongue and hindquarters. Histopathological examination revealed purulent encephalitis, a Gram-positive rod resembling *Erysipelothrix* (*Listeria*) *monocytogenes* being present. The authors considered that the organism was identical in appearance with that previously reported in caprine listeriosis. [Tajima, M. see preceding abst.]

ROTOV, I. V. (1953). [**Influence of climatic conditions on the survival of *Pasteurella.***]—*Veterinariya, Moscow.* **30,** No. 2. pp. 23-24. [In Russian.] 2767

R. discussed the epidemiology of pasteurellosis in domesticated animals, dealing with climatic factors in plains and in hill areas in the U.S.S.R. In the treeless plains of the steppes with their extreme continental climate, dry winds, low rainfall and few watercourses that dry up in summer, leaving salt deposits, *Pasteurella* infection is less common; when it occurs, chiefly in April-May, there is no characteristic clinical picture and it is confined mainly to calves and pigs. The organism was usually found in conjunction with *Bact. coli* and streptococci.

R. stated that in the mild, equable climate of the tree-clad foot-hills with their heavy rainfall, damp soil and many rivers, 61% of all species of animals become infected throughout the year, the high virulence of the infection causing 75–80% deaths in those affected; the

syndrome is characteristic. Of 100 carcasses of supposedly healthy cattle, pigs and sheep examined in butchers' shops, 56 were found to be infected.

The conclusions were that under humid and mild conditions *Pasteurella* organisms remain alive in organically rich soils, in thick herbage, in water and in buildings; whilst under dry conditions their chances of survival outside the host are negligible.—F.A.A.

JORDAN, R. M. M. (1952). **The nutrition of *Pasteurella septica*. I. The action of haematin. II. The formation of hydrogen peroxide in a chemically-defined medium.**—*Brit. J. exp. Path.* 33, 27-35 & 36-45. 2768

I & II. A strain of *Past. septica* requiring blood for optimum aerobic growth will grow with haematin or catalase instead of the blood. Haematin catalyses a slow decomposition of the hydrogen peroxide formed metabolically in aerated cultures, but this is not sufficient to account for the whole effect. In chemically defined media, lactic acid or sucrose are adequate carbon sources, but glucose, maltose or galactose inhibit. This inhibition is also due to hydrogen peroxide, formed by the carbohydrate catabolism. Equal amounts of glucose and lactic acid did not inhibit, however—the heaviest growth resulting in this case.—MALCOLM WOODBINE.

I. CRAIGE, J. E. (1948). **Proteus group organisms infecting dogs.**—*J. Amer. vet. med. Ass.* 113, 154-156. 2769

II. CRAIGE, J. E. (1948). **Differential diagnosis and specific therapy of dysenteries in dogs.**—*Ibid.* 343-347. 2770

III. CRAIGE, J. E. (1949). **Intestinal disturbances in dogs: differential diagnosis and specific therapy.**—*Ibid.* 425-428. 2771

IV. CRAIGE, J. E. (1950). **Diagnosis and treatment of dysentery in dogs.**—*Vet. Med.* 45, 55-59. 2772

I. C. mentioned, without giving detail, a survey of salmonella infection in dogs, carried out presumably in California. In the course of this survey, organisms of the *Proteus* group were recovered from 101 dogs with a variety of symptoms. C. gave a table. Seventeen were puppies under 2 weeks old, with peritonitis and navel infection; 24 were aged from 3 weeks to 3 months, affected with dysentery; 28 were aged 3 months to one year, 21 with dysentery, 2 with lack of condition and 5 with "nervous diseases"; and 32 were over one year, 12 with dysentery, 15 with lack of condition and 5 with nervous disorders.

II. An account of a clin. study of dysentery in dogs, attributed to different infections, bacteria of the *Salmonella* and *Proteus* groups, a spirochaete (probably *Borrelia eurygyrata*), *Giardia* sp., and coccidia. C. described a method of differential diagnosis based on microscopic and cultural tests.

III. A brief clinical note enlarging on the observations reported in I and II (*supra*).

IV. A further discussion of the items dealt with in I, II and III (*supra*). The observations made appear to be based mostly on clinical examination. [See also *V.B.* 19, 918.]

FEY, H. (1952). Isolierung eines Colistammes vom Typ. 55:B5 aus bovines Mastitis. [**Isolation of a strain of *Bact. coli* type 55:B5 from mastitis in cows.**]—*Schweiz. Z. allg. Path.* 15, 444-448. 2773

A strain of *Bact. coli* isolated from mastitis in a cow was found to be identical with one of the strains responsible for enteritis in babies. F. gave details of fermentation and serological tests used for the identification of the characters of the strain.—R.M.

MURDOCK, C. R. & GORDON, W. A. M. (1953). **The incidence of salmonella in healthy cattle in Northern Ireland.**—*Mon. Bull. Minist. Hlth Lab. Ser.* 12, 72-76. 2774

One thousand random faeces samples were collected from cattle at the Belfast abattoir. Samples positive for *S. dublin* totalled 8·6% and the batch incidence (51 batches) was 60·8%. County incidence varied from 6·7% in Londonderry to 26·4% in Armagh. Among home bred animals there was a 10·5% incidence compared to 24·5% in cattle imported from the Republic of Ireland. *S. thompson* and *S. gallinarum* (both twice) and *S. enteritidis* and *S. typhimurium* were also isolated.—C. C. BANNATYNE.

BYNOE, E. T, BAILEY, W. R. A. & LAIDLEY, R. (1953). **Salmonella types in Canada.**—*Canad. J. publ. Hlth.* 44, 137-147. [Authors' summary modified.] 2775

From Nov. 1948–Oct. 31st, 1952, 1,102 salmonella cultures isolated from human beings and 327 from animals were identified serologically at the National Salmonella Reference and Typing Centre, Laboratory of Hygiene, Ottawa. Forty types of salmonella were found, of which the most common from man were *S. typhi-murium* (20%), *S. paratyphi B* (24%), *S. typhi* (14%), *S. newport* (10%), and *S. oranienberg* (5%), and from animals—*S. typhimurium* (33%) and *S. oranienberg* (19%).

S. sandiego, S. saint-paul, S. california, S. heidelberg, S. kentucky, S. panama, S. meleagridis and *S. adelaide* were reported for the first time in Canada.

STEWART, W. H. & DECAPITO, T. (1953). **Salmonellosis in man and animals in southwest Georgia.**—*Amer. J. trop. Med. Hyg.* **2**, 273-278. 2776

Twenty-eight different types of *Salmonella* organisms were isolated from both domestic animals and man, 22 from animals but not from man and 19 from man only. There were 17 from fowls, 13 from dogs, 5 from ducks, 4 from cats and one from a cow.

The authors discussed the significance of the occurrence of similar types of *Salmonella* in a certain geographical area where salmonellosis in man and animals is endemic.—E.G.

GRIFFIN, C. A. (1952). **A study of prepared feeds in relation to salmonella infection in laboratory animals.**—*J. Amer. vet. med. Ass.* **121**, 197-200. 2777

Following outbreaks of salmonella infection in colonies of g. pigs, mice and monkeys, viable species of salmonella were recovered from samples of processed dog and mouse food respectively that had been in use.

—CHARLOTTE M. WOOD.

NAWROCKI, J. (1953). Przygotowanie oraz zastosowanie antygenu barwnego do masowych badań terenowych na białą biegunkę piskląt. **[Preparation and use of stained antigen for diagnosis of pullorum disease.]**—*Méd. vét., Varsovie.* **9**, 58 - 61. [In Polish.] 2778

A description of stained antigen for use in agglutination tests for *S. pullorum*.

—J. R. MITCHELL.

MILNER, K. C. & SHAFFER, M. F. (1952). **Bacteriologic studies of experimental *Salmonella* infections in chicks.**—*J. infect. Dis.* **90**, 81-96. [Authors' summary copied *verbatim*.] 2779

Chicks were inoculated orally or intraperitoneally with varying numbers of viable salmonella. Evidence of infection was obtained by bacteriologic examination of specimens obtained by cloacal swab or cardiac puncture.

It was found that one-day-old birds could be readily infected by the oral route with very small doses of organisms belonging to any of several of the Kauffman-White serologic groups. For the purpose of analyzing certain features of the infectious process, additional experiments were performed which involved chiefly a single strain of *Salmonella typhimurium*. Susceptibility to infection by the oral route decreased rapidly with advancing age of the birds. Animals from any of several breeds could be used satisfactorily providing they were of the proper age. The case fatality rates were not high although the chicks frequently showed bacteremia. The presence of salmonella in the feces was demonstrated earlier, more regularly, and over a longer period of time than in the circulating blood. The duration of enteric excretion appeared to vary depending on the infecting strain and the individual bird affected, with some infections persisting for at least several weeks. Following oral infection antibodies appeared in the serum.

A similar type of infection could be induced by intraperitoneal injection of salmonella, although a higher fatality rate was observed to follow.

The ease with which young chicks can be infected by the oral route with small numbers of organisms of many salmonella types and the regularity with which the organisms can be demonstrated in fecal cultures taken over a period of many days, despite the benign course of the disease in most animals, indicate that this experimental method should be applicable to the study of additional aspects of salmonellosis.

SELLERS, K. C. & SINCLAIR, W. B. V. (1953). **A case of *Salmonella typhi-murium* infection in cattle and its isolation from other sources.**—*Vet. Rec.* **65**, 233-234. [Authors' summary copied *verbatim*.] 2780

A clinical case of *S. typhi-murium* infection in a small herd of dairy cows was followed by abortion in two cows. The strains isolated from the cows and aborted foetuses, from the pigs, ducks and hens on the same premises and from liquid and solid sewage were of the same antigenic and Vi-phage type.

MAYER, H. F., LOTTERO, A. A. & FERNANDEZ, O. (1952). Encuesta serologica sobre infección brucelica en el Chaco. **[Serological survey of brucellosis in El Chaco.]**—*Bol. Ofic. sanit. pan-amer.* **33**, 384-390. [English summary.] 2781

An account of a survey for brucellosis in El Chaco, Paraguay, consisting of serum tests by the rapid method described by Huddleson & Abell (1923). Tests were done on 51 employees of a municipal abattoir, 131 dairy cows (5% positive), 1,201 slaughtered cattle (15% positive of one batch and 12% of remainder

positive), 176 slaughtered pigs (14% positive) and 57 slaughtered goats (all negative).

WILLETT, E. (1951). Zur Frage der Unbedenklichkeit der Impfung von geschlechtsreifen Rindern mit dem Stamm " Buck 19 " gegen das Bangsche Verkalben. **[Effect of Strain 19 brucellosis vaccine on sexually mature cattle.]**—*Inaug. Diss., Giessen.* pp. 26. 2782

A general discussion on the use of Strain 19 *Br. abortus* vaccine, together with an account of abortion in a heifer infected with Strain 19 during the fifth month of pregnancy.—R.M.

GENEST, P. (1952). Prémunition antibrucellique à l'aide de souches vivantes et atténuées. **[Immunization against brucellosis using living attenuated organisms.]**—*Canad. J. comp. Med.* **16,** 185-194. [In French.] 2783

G. outlined the importance of brucellosis in man and animals and the requirements for an efficient vaccine. He discussed the published results of the use of certain vaccines. Early results with killed cultures may have been due to poor methods of preparing these products. Recent work indicates the possibility of using killed cultures under new methods of preparation and application.—R. GWATKIN.

WIPF, L., MORSE, E. V., MCNUTT, S. H. & GLATTLI, H. R. (1952). **Pathological aspects of canine brucellosis following oral exposure.** —*Amer. J. vet. Res.* **13,** 366-372. 2784

Histological changes present in the lymph nodes of 13 dogs experimentally infected with *Br. abortus* and of 11 apparently normal dogs were described. Granulomata and proliferation of fibrocytes were found in the lymph nodes of a large proportion of infected dogs and in none of the controls. There were greater numbers of multinucleated cells in the nodes of infected dogs than in those of controls. Other pathological changes present in both groups could not be attributed to brucella infection.—R.M.

STOENNER, H. G. (1953). **A capillary-tube test for leptospirosis.**—*Amer. J. Hyg.* **57,** 316-327. [Author's summary copied *verbatim.*] 2785

Antigens for a macroscopic capillary-tube agglutination test for leptospirosis were prepared by suspending formalin killed leptospirae in hypertonic, buffered, sodium chloride solution. As evaluated by examining human, bovine and canine serums, the method compared favourably in sensitivity and specificity with the standard microscopic-agglutination-lysis technique. Preliminary results indicate that the capillary-tube antigens remain stable for 5 to 11 months. Because of the simplicity of conducting the test and the stability of the antigen, this tool offers a decided advantage over the microscopic-agglutination-lysis and the complement-fixation tests for leptospirosis.

KATIĆ, R. V. (1950). Pokušaj objašnjenja delovanja antitoksina i anatoksina na kompleks spoja toksin + živčano łkivo kod seroanatoksi - terapije tetanusnog oboljenja. **[Action of antitoxin and anatoxin on the toxin-nervous tissue complex in experimental tetanus.]**—*Vet. Glasnik.* **4,** 209-224. [In Croat. Abst. from French summary.] 2786

No action of anatoxin or antitoxin could be shown *in vitro* on toxin linked to the nervous tissue of g. pigs. *In vivo,* anatoxin did not break down the toxin-nervous tissue complex. —I. MARTINI.

SÁNCHEZ BOTIJA, C. (1951). Los síndromes nerviosos del botulismo de los équidos. **[The nervous symptoms of botulism in the horse.]** —*An. Fac. Vet., Madrid.* **3,** 325-335. [English, French and German summaries.] 2787

A general discussion, containing no new material.—I. W. JENNINGS.

JACQUET, J. & PRÉVOT, A.-R. (1952). Le botulisme expérimental du cheval provoqué par la toxine D. Evolution et essai de sérothérapie. **[Botulism produced experimentally in the horse using botulinus D toxin.]**—*Bull. Acad. vét. Fr.* **25,** 247-253. 2788

Botulinus D toxin, ingested by or injected into 5 horses in sufficient quantities caused typical botulism. Large doses of specific antiserum injected i/v into one of the horses failed to prevent its death.—R. MARSHALL.

POLKOVNIKOVA, R. S., IVANOV, S. P. & SMIRNOV, I. I. (1952). **[An aluminium-hydroxide formol vaccine against caprine contagious pleuro-pneumonia.]** — *Veterinariya, Moscow.* **29,** No. 6. pp. 20-23. 2789

The authors described the preparation of a vaccine consisting of a formolized buffered $Al(OH)_3$ suspension. In lab. tests on 379 goats 100% of those vaccinated were stated to have resisted infection both by contact and artificial infection, which was repeated a year later with the same result. Of the controls, 17 out of 19 succumbed. In the following two years 55,382 goats were vaccinated and 5,269 were left as controls. As a prophylactic it was stated to be 100% effective and 98·2% effective in herds where the disease had already started.—F.A.A.

EDWARD, D. G. ff. & FITZGERALD, W. A. (1952). **A growth factor needed to isolate organisms of the pleuropneumonia group from the genital tract of cattle.**—*Vet. Rec.* **64**, 395. [Authors' conclusions copied *verbatim*.] 2790

The majority of P strains of pleuropneumonia-like organisms need a specific growth factor when first isolated from the genital tract of cattle. Without the factor the organisms do not grow, or grow poorly, on a medium which is satisfactory for growing other members of the pleuropneumonia group. Growth can be obtained by applying to the surface of the medium a suspension of hog gastric mucin or by incorporating in it thymic nucleic acid.

PAULSEN, M. & MOULE, G. R. (1953). **Infectious ovine abortion.**—*Aust. vet. J.* **29**, 133-139. 2791

The authors reviewed literature on abortions due to *Vibrio fetus*, organisms of the psittacosis-lymphogranuloma group, tick-borne fever, *Erysipelothrix* (*Listeria*) *monocytogenes*, *Brucella melitensis*, and *Salmonella abortus-ovis*. The incidence, method of infection, symptoms, diagnosis, control of, and immunity to, the disease as caused by each type of organism were dealt with.—A. CULEY.

I & II. GUILBRIDE, P. D. L. (1952). **The importance of animal disease to public health in the Caribbean, with special reference to Jamaica.**—*W. Ind. med. J.* **1**, 105-137 & 291-385. [Abst. from author's summaries.] 2792

I. A report of a survey of the Caribbean area by questionnaire, reference to official reports, personal contacts and correspondence, on the incidence of TB., brucellosis, anthrax, tetanus, and leptospirosis (Weil's disease). It appears that while the incidence of brucellosis is usually low in animals and man in most West Indian territories, it can assume dangerous proportions in animals, and can become a formidable public health problem. Concerning TB. of bovine origin (a) in cattle, (b) in man in the West Indies, statistics are scanty and incomplete; the incidence of TB. in cattle is usually low.

II. Anthrax in animals is widespread throughout the area, being enzootic in some territories such as Nevis, or restricted to certain localities such as the plain of Gonaïves in Haiti, the coastal belt in British Guiana, and the Pedro plains and adjoining districts in Jamaica. The incidence in man is low except in Haiti, where it appears to be exceptionally high.

Tetanus is commoner in rural areas which are heavily cultivated. Little is known about leptospirosis (Weil's disease) in the greater part of the Caribbean area. G. suggested that veterinarians and medical practitioners should be alert to the prevalence of this disease, in order that early diagnosis may be made and specific treatment applied without delay. Mention was made of spirochaetosis in the West Indies.

HENDERSON, D. W. (1950). **Discussion on determinant factors in the infectivity of micro-organisms. I. Bacteria.**—*Proc. R. Soc. Med.* **43**, 961-964. 2793

BEVERIDGE, W. I. B. (1950). **Discussion on determinant factors in the infectivity of micro-organisms. II. Viruses.**—*Ibid.* 964-968. 2794

I. In evolution saprophytism preceded parasitism. The change to parasitism is usually accompanied by fundamental changes in the internal economy of the parasite, such as nutritional requirements and antigenic structure. No single intrinsic factor, or group of factors, associated with the organism, determines infectivity, which is defined as the power of being ' poisonous ' and is considered synonymous with the term virulence. Extrinsic factors play an equally important role. Examples were given of the enhancing of the infectivity of *e.g.* anthrax spore suspensions by surface active agents, and by hog gastric mucin for a variety of organisms. The route of infection can determine the type of host reaction as well as the type of disease manifesting itself. In the problem of airborne infection the following points deserve immediate attention: the role of particle size in determining infectivity according to the pathogen involved; the role played by the menstruum in which the infective particles are held; the possible synergic action of two or more potential invaders.

II. Virus haemagglutination has been demonstrated with the viruses of influenza A and B, Newcastle disease and fowl plague, mumps, Horsfall's pneumonia virus of mice, Taylor's new influenza-like virus ('1233'), and several neurotropic viruses infecting the brain of mice. The virus of louping-ill attaches to red cells but no haemagglutination has been demonstrated. Recent work on the virus-cell interactions with the influenza group of viruses was summarized. Our knowledge of how viruses penetrate cell walls is practically *nil*. Examples were given of the ' excessive dose effect ' and possible explanations were discussed. The effect may be cumulative over several passages. Conversely, several rapid

passages under optimum conditions may be required to regain maximum infectivity of a virus subjected to adverse influences. Attenuation and adaptation were defined and explained. It may be possible for two strains of an animal virus to ' cross-breed ' by a sexual process involving a recombination of the characters of two parent strains.—W. R. Bett.

Gianni, A. (1952). Sulle fasi di sviluppo della Gram-positività nei germi. **[Development of Gram-positiveness in bacteria.]**—*Bol. Ist. sieroter. Milano.* **31,** 427-433. [English summary.] 2795

B. subtilis, B. mesentericus and *B. anthracis* are Gram-negative at the beginning of their development. The Gram-negative phase, in micro-organisms in semi-anaerobiosis, lasts until the 2nd–3rd hour and later. The Gram-positive substance distributes itself under the cell wall. The development of the micro-organisms was followed on microcultures, using phase-contrast microscopy. G. drew attention to problems of bacterial cytology which arise from such observations.

Catcheside, D. G. [Reader in Plant Cytogenetics, University of Cambridge.] (1951). **The genetics of micro-organisms.** pp. vii + 223. London: Sir Isaac Pitman & Sons, Ltd. 21s. 2796

"This book is based on a course of lectures devised for biochemists specializing in the microbial aspects of their subject. It attempts to provide an introduction to the general and special aspects of the genetics of micro-organisms." In his preface the author defines ' micro-organisms ' as " any organisms which can be, and habitually are, propagated vegetatively from single cells. They include most thallophytes (algae and fungi), the protozoa and other protista, the bacteria and, by extension of the definition of the term 'cell', the viruses." In the veterinary field, this work will be especially welcomed by research workers who find themselves involved in problems of bacterial genetics; for them, it is undoubtedly a standard work. The presentation is thorough and the language clear, though necessarily esoteric. There are a number of ambiguities in the presentation of mathematical formulae; since the student will not necessarily deduce the correct formulae from the text, it is to be hoped that these errors will be dealt with in the preparation of the next edition.—F. B. Leech.

See also absts. **2960** (cultivation of micro-organisms in cheek pouches of hamsters); **2966** (book, human actinomycosis); **2967** (book, diseases of sheep and goats).

DISEASES CAUSED BY PROTOZOAN PARASITES

I Hornby, H. E. (1952). **On mapping the distribution of animal trypanosomiasis in Africa.**—*Bur. interafr. Tsetse.* I.S.C.T.R. (52) No. 1. pp. 6. [Mimeographed.] 2797

II. Colback, H. R. F. (1952). **Note about the map of animal trypanosomiasis in Belgian Congo and Ruanda-Urundi.**—*Ibid.* No. 26. pp. 3. 2798

I. Several factors, *e.g.* the multiplicity and close interrelationship of trypanosome diseases, make the mapping of the distribution of trypanosomiasis very difficult. H. suggested that a tsetse fly map would be more useful, so that areas of mechanically transmitted trypanosomiasis outside limits of tsetse areas could be controlled.

II. This map is confined to trypanosomiasis in cattle, due mainly to *T. vivax* and *T. congolense,* although other trypanosomes are present. C. referred to the same mapping difficulties encountered by Hornby [I *supra*]. —M. L. Clarke.

Vergani, F. (1952). Estudio sobre la vección de tripanosomas por medio de dipteros no vulnerantes. **[Transmission of trypanosomes by non-biting flies.]**—*Bol. Inst. Invest. vet., Caracas.* **4,** 657-672. [English summary and conclusions.] 2799

The author demonstrated that *Musca domestica* and *Cochliomyia hominivorax,* non-biting flies which frequent the mucosae and surface wounds of domestic animals, are capable of transmitting trypanosome infection from wound to wound. Both flies were observed to regurgitate after feeding heavily on infected rat blood, and infection was set up in healthy rats by the inoculation of regurgitated droplets. —A.S.

Browning, C. H., Adamson, H. & Keppie, A. A. N. (1953). **Acquired immunity to *Trypanosoma congolense*: further observations.**—*J. Path. Bact.* **65,** 137-141. 2800

It is considered that active immunization would not be practicable in controlling the natural spread of *T. congolense* infection since, in addition to the absence of cross immunity between the several original and derived strains, there are also continuing changes in the immunological characters of the individual strains

—the so-called " antigenic flux "—throughout the course of a chronic infection.

—I. W. JENNINGS.

WILSON, S. G. & FAIRCLOUGH, R. (1953). **A preliminary note on treatment of *T. congolense* infections with ethidium bromide in cattle in Kenya Colony.**—*Vet. Rec.* **65,** 201-202. [Authors' summary modified.] **2801**

Of 16 animals treated with ethidium bromide at dosage rates varying from 0·5 to 4 mg./kg. all were cured of *T. congolense* infection. Four animals died from debility without showing signs of drug toxicity or relapse to infection. Four animals treated with dimidium bromide at 1 mg./kg. were also cured, but again one death occurred during the experimental period from debility.

The 5 animals of the control group all died of acute *T. congolense* infection.

The authors considered that ethidium bromide is capable of effecting a cure of *T. congolense* infections at comparatively low dosage.

EVANS, J. T. R. (1952). **Bovine trypanosomiasis—some preliminary therapeutic and prophylactic experiments with new phenanthridine derivatives.**—*Bull. Bur. interafr. Tsetse.* I.S.C.T.R. (52) No. 6. pp. 7. [Mimeographed.] **2802**

Ethidium bromide, 0·5 mg. per kg., cured *T. congolense* and *T. vivax* infections in cattle and there were no relapses 4 months after treatment.

In a small trial against dimidium bromide-resistant *T. congolense,* antrycide methyl sulphate gave protection.—JAS. G. O'SULLIVAN.

BURTT, E. (1953). **Attenuation of virulence of *Trypanosoma brucei* correlated with loss of salivary gland infection by a tsetse-fly.**—*Trans. R. Soc. trop. Med. Hyg.* **47,** 246-247. **2803**

An observation of the spontaneous disappearance of trypanosomes from the salivary glands of a tsetse fly and its eventual inability to transmit infection to laboratory animals. Following its isolation the fly had been able to produce only transient infections.

—S. F. M. DAVIES.

ANON. (1952). **Trichomonad enteritis.**—*Iowa Vet.* **23,** No. 5. p. 21. [Part of article entitled " Diagnostic laboratory " pp. 18-21.] **2804**

During the course of work in 1951 at the Iowa Veterinary Diagnostic Laboratory, a Holstein heifer and a Hereford bull were found to be affected with enteritis with diarrhoea and loss of appetite. Other animals in the same herds were reported to be in poor condition. P.M. examination of both animals revealed severe oedema and petechial haemorrhages in the mucous membrane of the abomasum and intestines. Large numbers of trichomonads were present especially in the abomasum and large intestine. No other pathogenic organisms were found.—L. P. JOYNER.

CLAUSEN, J. K. (1953). **Serum as a source of growth-factors for *Trichomonas foetus.*** [Correspondence.]—*Nature, Lond.* **171,** 1067-1068. **2805**

The essential components of serum for *Tr. foetus* are water soluble, non-dialysable and heat stable at pH 8. One of the factors may be sero-mucoid.—S. F. M. DAVIES.

DELAPPE, I. P. (1953). **Studies on *Histomonas meleagridis.* I. Use of antibiotics to facilitate *in vitro* isolation.**—*Exp. Parasit.* **2,** 79-86. [Abst. from author's summary.] **2806**

The incorporation of penicillin and streptomycin (100 or 500 units/ml), either singly or together, in Laidlaw's medium facilitated the initial isolation of *Histomonas meleagridis* and also prolonged its survival time *in vitro.* Cultures so treated were not sterilized, but there was evidence of bacterial inhibition.

Attempts to free stock cultures of *Histomonas* of their entire bacterial flora were unsuccessful; the flagellate died shortly after the disappearance of the bacterial flora.

The growth of *Histomonas in vitro* was greatly impeded whenever *Blastocystis* was present.—A.S.

SWALES, W. E. (1952). **Enterohepatitis (blackhead) in turkeys. VIII. Further observations on the uses and mode of action of 2-amino-5-nitrothiazole.**—*Canad. J. comp. Med.* **16,** 57-62. **2807**

S. presented further evidence on the efficiency of 2-amino-5-nitrothiazole in the control of enterohepatitis. The water-soluble form was at least as effective as when the drug was given in feed. The effect of the drug on the larvae of *Heterakis* was also confirmed. The destruction of larvae may be an important role of the drug in controlling outbreaks of the disease.

—R. GWATKIN.

SWALES, W. E. (1952). **Enterohepatitis (blackhead) in turkeys. IX. Miscellaneous tests of chemicals for possible therapeutic or prophylactic value.**—*Canad. J. comp. Med.* **16,** 63-65. **2808**

Four derivatives of benzoic acid were tested for their prophylactic or therapeutic value against enterohepatitis in turkeys. The results were not encouraging, none of the compounds exhibiting properties comparable with those of 2-amino-5-nitrothiazole.—A.S.

Pellérdy, L. & Babos, A. (1952). **Investigations into the therapy of liver coccidiosis with atebrine, nitrofurazone and ultraseptyl, together with attempts to measure the toxic doses of these compounds.**—*Acta vet. hung.* **2**, 281-287. [In English: Russian summary.] **2809**

Atebrine (mepacrine hydrochloride) had no coccidiostatic action in experimental rabbits. Nitrofurazone (5-nitro-2 furaldehyde-semibazone) was ineffective, in daily doses of 0·01 g./kg. given parenterally or *per os*. Moderate coccidiostatic effects were seen when it was given in a food mixture 1:1000. Ultraseptyl (*p*-amino-benzol-sulphamido-methylthiazole) administered 1:200 with food or 0·1 g. i/m was coccidiostatic although it did not cure liver coccidiosis once established. The toxic level of each of the drugs was ascertained.

—Jas. G. O'Sullivan.

Uricchio, W. A. (1953). **Destruction of coccidial oocysts of chickens by means of chemicals.**—*Exp. Parasit.* **2**, 16-18. [Abst. from author's summary.] **2810**

An account of experiments to determine the effect of various chemicals on *Eimeria tenella* oocysts outside the host. In one experiment oocysts which were treated with allyl acetone and dichlorobutene, pure or diluted with an equal volume of polyoxyethylene sorbital esters of mixed fatty acids, showed no signs of sporulation. In another experiment birds were fed a mash containing sporulated oocysts treated with allyl acetone and dibromobutene (pure or diluted as before). No oocysts were recovered from the birds at P.M. examination after the experiment.—A.S.

Bray, R. S. & Garnham, P. C. C. (1953). **Effect of milk diet on *P. cynomolgi* infections in monkeys.**—*Brit. med. J.* May 30th, 1200-1201. [Authors' summary modified.] **2811**

Two monkeys infected with *Plasmodium cynomolgi* by blood inoculation developed only a low-grade parasitaemia while on a milk diet.

One of two monkeys infected with *Pl. cynomolgi* by sporozoite inoculation and also on a milk diet showed an equally slight response; the second had a rather heavier infection for two days while the pre-erythrocytic schizonts were rupturing in the liver. Pre-erythrocytic schizonts, sporogonic stages, and merozoites all appeared to be unaffected by the milk, the suppressive action seeming to be upon the immature schizonts in the blood, probably during active division of the nucleus.

These low-grade parasitaemias did not produce premunition in the host animals.

Guimarães, L. M., Lion de Araujo, T. & de Lacerda, P. M. G., Jr. (1951). Ocorrência da nutaliose em equinos puro sangue de corridas, em São Paulo. [***Babesia equi* infection in race horses in Brazil.**]—*Proc. Vth Congr. bras. Vet.* São Paulo, 1950. 623-627. [English abstract.] **2812**

A description of *Babesia equi* infection in Thoroughbred stock. The authors observed various forms of the organism in blood smears and discussed the results of treatment with 5% urea-dimethyl quinolyl sulphate solution.

—A.S.

Colas-Belcour, J. & Vervent, G. (1953). Quelques observations sur des souris ayant survécu à leur infection par *Babesia* (*Nuttalia*) *rodhaini*: van den Berghe, Vincke, Chardome et van den Bulcke 1950. [**Observations on mice recovered from *Babesia rodhaini* infection.**]—*Bull. Soc. Path. exot.* **46**, 34-39. **2813**

Nine surviving mice of 192 inoculated with *B. rodhaini* [*V.B.* **21**, 1330] included two that were immune and still had piroplasms present. Four others were also immune, but piroplasms could not be demonstrated nor was their blood infective for other mice.—Jas. G. O'Sullivan.

See also abst. **2960** (cultivation of protozoa in cheek pouches of hamsters).

DISEASES CAUSED BY VIRUSES AND RICKETTSIA

Vogelsang, E. G., Chavarría, M. & Rosales, G. H. (1951). La fiebre aftosa en Venezuela. [**Foot and mouth disease in Venezuela.**]—*Rev. Med. vet., Caracas.* **10**, 47-52. **2814**

In Venezuela, F. & M. disease is difficult to distinguish clinically from vesicular stomatitis, which is particularly virulent and widespread there. Outbreaks of type O infection have been detected since 1950, and of type A since 1951. Spread has been limited by isolation, quarantine, disinfection and slaughter.

—I. W. Jennings.

FUNES, E. S. (1952). Estudio serológico de la cepa de virus aftoso "A" chilena (1950-1951) y su relación con las variantes argentinas. **[Serological study of a foot and mouth disease A type virus from Chile.]**—*Rev. Soc. Med. vet., Santiago.* **4**, No. 5. pp. 6-7. **2815**

The outbreak of F. & M. disease in Chile in 1950–51 was caused by a type of virus, that was serologically similar to the A_3 variant. Heterologous vaccines in use in the area gave no protection.—I. W. JENNINGS.

EPSTEIN, B. (1952). Lesiones cardiacas en la fiebre aftosa del bovino. Pancarditis aftosa. **[Heart lesions in foot and mouth disease.]**—*Bol. Direcc. Ganad., Montevideo.* **33**, 134-153. [English summary.] **2816**

A description of lesions of the heart in cattle experimentally infected with F. & M. disease. There were slight lesions in the endocardium and pericardium and more severe ones in the myocardium. The intracardiac nervous system was severely affected, exhibiting degenerative changes of the nuclei and ganglionic fibres. E. proposed the general term F. & M. pancarditis to describe the condition.—A.S.

SCHMIDT, F. E. (1951). La reacción de fijación del complemento para el diagnóstico de los virus aftosos. **[The complement-fixation reaction for diagnosis of F. & M. disease.]**—*Rev. Med. vet., Chile.* **1**, No. 1. pp. 9-14. **2817**

S. recommended the complement fixation reaction for testing the purity of O, A and C strains for the preparation of vaccines, and for diagnosis of field infections of F. & M. disease. —I. W. JENNINGS.

FRENKEL, H. S. (1953). **Research on foot and mouth disease. The cultivation of the virus on a practical scale in explantations of bovine tongue epithelium.**—*Bull. Off. int. Epiz.* **39**, 98-102. [In English.] **2818**

F. described the successful cultivation of F. & M. disease virus on tongue epithelial tissue in large containers of 600 l. capacity. In a series of experiments he demonstrated that tongue epithelial tissue was still fit for use after being stored in a nutrient soln. and kept at 2° to 3°C. for 8 days.

He considered the possibility of transporting canned virus material to be of great importance in the international control of the disease.—A.S.

DARBYSHIRE, J. H. (1953). **Some observations on rabies in sheep.**—*Vet. Rec.* **65**, 261-262. **2819**

An outbreak of rabies in a flock of 150 Merino sheep in Southern Rhodesia resulted in 47 deaths. The source of infection was most probably a honey-badger (*Mellivora capensis*). The period of incubation was probably 19–27 days.—F. B. LEECH.

FREDERICKSON, L. E., WILLETT, J. C., SMITH, J. E. & PRICE, E. R. (1953). **Mass immunization of dogs against rabies. Its influence on a rabies epizootic in St. Louis.**—*Amer. J. publ. Hlth.* **43**, 399-404. **2820**

After 6 years almost free from rabies, St. Louis city experienced an epizootic early in 1951. Special control measures—eight times the normal effort in collecting stray dogs, and mass vaccination of 70% of the dog population —were followed by a sharp reduction in incidence of rabies.—F. B. LEECH.

SZLACHTA, H. L. & HABEL, R. E. (1953). **Inclusions resembling Negri bodies in the brains of nonrabid cats.**—*Cornell Vet.* **43**, 207-212. [Authors' summary modified.] **2821**

Two types of cytoplasmic inclusions occurring in the neurons of normal cat brains were described, and it was suggested that they may lead to false-positive diagnoses of rabies.

PUNTIGAN, F., ORTH, E. & KUBIN, G. (1952). Über den Nachweis von Vaccinavirus in der Rückenmarks Flüssigkeit von Jungrindern. **[Presence of vaccinia virus in the cerebrospinal fluid of young cattle.]**—*Z. Hyg. InfektKr.* **135**, 225-230. **2822**

It was stated that electron microscopy revealed the presence of vaccinia virus in the c.s.f. of young cattle 54–165 hours after vaccination.—H BEHRENS.

SCHABEL, F. M., JR., LASTER, W. R., JR., BROCKMAN, R. W. & SKIPPER, H. E. (1953). **Observations on antiviral activity of netropsin.**—*Proc. Soc. exp. Biol., N. Y.* **83**, 1-3. [Authors' summary copied *verbatim*.] **2823**

Netropsin, an antibiotic from culture filtrates of *Streptomyces netropsis*, had marked therapeutic effect on experimental vaccinial infections (WR strain) in intracerebrally inoculated mice. It is ineffective against infections in mice with the viruses of feline pneumonitis, influenza, Western equine encepholomyelitis, and poliomyelitis.

VERGE, J. (1952). Les grippes animales.—La grippe du porc. **[Influenza in pigs and other domestic animals.]**—*Path. Gén.* **52**, 641-646. [English summary.] **2824**

A general discussion of the characters and possible relationships of swine influenza, " Ferkelgrippe " and virus pneumonia of pigs.
—J. T. Done.

Arakawa, S., Kaneko, T., Seki, T. & Muto, S. (1953). Experimentelle Studien über das Virus der infektiösen Anämie der Pferde. **[Experimental studies of the virus of equine infectious anaemia.]**—*Wien. tierärztl. Mschr.* **40**, 321-326. [English, French and Italian summaries.] **2825**

Using infective horse serum, virus was successfully grown and passaged through both brains of young mice weighing 7 g. and on the chorio-allantoic membrane of chick embryos 8–10 days old.—E. A. Hirsch.

Alice, F. J. (1951). Encefalomielite equina na Bahia: estudo de três amostras isoladas. **[Equine infectious encephalomyelitis in Brazil.]**—*Proc. Vth Congr. bras. Vet.* São Paulo, 1950. 585 - 608. [English abstract.] **2826**

The author obtained 3 strains of equine infectious encephalomyelitis virus, one from an outbreak in 1948, and two others in 1950. Marmosets (*Callithrix jacchus* and *C. penicillata*) were susceptible, developing lesions of encephalomyelitis when injected intracranially. When injected subcutaneously the virus disappeared from the blood within 82 hours.—A.S.

Hutter, K. (1953). Erfahrungen über die Übertragung der Schweinepest von Wildschweinen auf Hausschweine. **[Wild pigs as carriers of swine fever in Germany.]**—*Mh. VetMed.* **8**, 109-112. **2827**

Wild pigs were found to have been the source of infection in the 1951-52 epidemic of swine fever in Thuringia. The epidemic was controlled by reducing the wild pig population, shooting of sick animals and disposal of wild pig carcasses. The most severely affected areas were those adjacent to the frontier with the Western zone. [See also *V.B.* **23**, 2271.]
—H. Behrens.

Duckworth, R. E. (1953). **Vesicular exanthema of swine.**—*Bull. Calif. Dep. Agric.* **42**, 11-19. **2828**

D. discussed briefly the history of vesicular exanthema of swine in California, emphasized the association of this disease with garbage feeding and advocated prohibition of the feeding of raw garbage to pigs.—D. Luke.

Betts, A. O. (1953). **Virus pneumonia of pigs.**—*Pig Breed. Gaz.* No. 72. pp. 27-28, 31 & 33. **2829**

This is a general review of the disease in England and a summary of some of the recent research work at the Department of Animal Pathology, Cambridge. [*V.B.* **22**, 1343 & 2499.]
—D. Luke.

Hirt, G. (1951). Diagnose et histopathologie de la gastro-entérite infectieuse des porcs. **[Diagnosis and histology of infectious gastro-enteritis of pigs.]**—*Acta vet. hung.* **1**, 239-250. [In French. Russian summary.] **2830**

H. regards the macroscopic and microscopic changes in the colon in infectious gastro-enteritis as quite specific. He described in detail the development of the lesions and their differentiation from the colitis of swine fever and *Salmonella cholerae-suis* infection. Eleven photographs were included.—J. T. Done.

Lasfargues, E. & Corvazier, R. (1952). Culture *in vitro* du virus de Carré en présence de tissus embryonnaires de poulet. **[Tissue culture of distemper virus on chick embryo tissues.]**—*C. R. Soc. biol. Paris.* **146**, 1713-1715. **2831**

Using chick embryo tissues, distemper virus isolated from a ferret was cultivated *in vitro* over a period of 6 weeks.—D. Luke.

Lasfargues, E. & Lasfargues, J. (1952). Inclusions cytoplasmiques provoquées par l'agent de la maladie de Carré dans les fibroblastes d'embryon de poulet cultivés " in vitro ". **[Inclusion bodies in chick embryos after inoculation with distemper virus.]**—*C. R. Soc. biol. Paris.* **146**, 1711-1713. **2832**

Strongly eosinophilic inclusion bodies were demonstrated in chick embryo tissue cultures inoculated with distemper virus. The inclusion bodies were not, however, regularly produced. The authors discussed their possible significance.
—D. Luke.

Cabasso, V. J., Stebbins, M. R. & Cox, H. R. (1953). **Onset of resistance and duration of immunity to distemper in ferrets following a single injection of avianized distemper vaccine.**—*Vet. Med.* **48**, 147-150. **2833**

After a brief and very incomplete historical account of the development of the use of modified live vaccines in virus infections, experiments with an egg adapted distemper virus in ferrets were described.

No therapeutic effect was demonstrated when the modified virus was injected after in-

fection with a virulent virus. In an attempt to determine the minimum interval between injection of the modified virus and the development of a useful degree of immunity it was found that the period was as short as one day [the number of ferrets used was small]. In still another experiment with small numbers of ferrets, the duration of immunity after injection was 2 years.—M.C.

HARTSOUGH, G. R. & GORHAM, J. R. (1953). **Control of distemper in mink.**—*J. Amer. vet. med. Ass.* **122,** 383-386. **2834**

Prevention of distemper on mink farms and handling of outbreaks were discussed. The use of modified live virus (chick embryo strains) has been found the most successful means of control.—E. A. HIRSCH.

FENNER, C. & SCHINDLER, R. (1952). Ein Beitrag zur Frage der Hartballenkrankheit (hard pad disease). **[Hard pad disease.]**—*Mh. prakt. Tierheilk.* **4,** 289-300. **2835**

Two cases of hard pad disease were investigated. Transmission experiments with dogs and ferrets, and c.f. tests revealed the presence of distemper virus. This virus along with secondary invaders (streptococci and salmonella) was thought to produce the clin. picture of hard pad disease.—R.M.

GLEDHILL, A. W. (1952). **Feline enteritis.**—*Vet. Rec.* **64,** 723-727; Discussion pp. 727-732. **2836**

G. reveiwed the incidence, clinical features, pathology and differential diagnosis of feline enteritis. He considered that although the disease in the U.K. is probably the same as feline leucopenia of the U.S.A., the name feline enteritis should be retained. The properties of the causal virus were described. Many young cats were found to be immune to the disease. This may have been due either to transference of antibodies from the mother, or to immunization by a naturally transmitted but avirulent virus. Immunization of cats by a vaccine-virus method yielded promising results. The main obstacle to the large-scale use of such products was the difficulty in obtaining uniformly susceptible cats for testing them.—R.M.

DAY, W. C., DELAHA, E. C., REAGAN, R. L. & BRUECKNER, A. L. (1953). **A study of the effect of *in vitro* cultivation on the pathogenicity of Newcastle disease virus for baby chicks and chick embryos.**—*Cornell Vet.* **43,** 203-207. [Authors' summary modified.] **2837**

The 15th subculture of the Minnesota strain of the Newcastle disease virus was propagated in tissue culture containing either whole chick embryo or the skin of chick embryo. Whichever was used in the tissue culture medium, the virus retained most of its pathogenicity for chick embryos. After the 20th passage in a medium containing whole chick embryo the virus lost some of its pathogenicity for baby chicks when inoculated i/m., but when grown in medium containing chick embryonic skin it was extremely pathogenic for baby chicks when inoculated by the same route.

KOMAROV, A. & GOLDSMITH, L. (1952). **[The isolation of the causative agent of ornithosis (psittacosis) in Israel.]**—*Harefuah.* **43,** 85. [In Hebrew. English summary p. 83.] **2838**

An account of ornithosis in a flock of pigeons in Israel with the suggestion that atypical pneumonia in human beings may have been due to the virus of that disease. Serum from the attendant in contact with the infected pigeons reacted to the c.f. test.

NADEL, M. K. & FELLOWES, O. N. (1953). **The relationships of viral content of living and dead whole eggs inoculated with various concentrations of psittacosis virus.**—*J. Bact.* **65,** 449-453. [Authors' summary modified.] **2839**

Psittacosis virus was inoculated into 8-day-embryonated eggs at concentrations of 50,000, 5,000, 500 and 50 LD_{50} doses per ml. The eggs were incubated at 37·5°C. and selective lot samples of dead and living eggs ground in the Waring blendor and tested for their virus content by intracerebral injection into mice. Growth curves determined biometrically using linear regressions revealed that the greater the viral conc. in the inoculum the less the virus return through multiplication because of an early high death rate. Conversely those eggs inoculated with the lower conc. of inoculum, having a greater time for viral propagation, yielded a greater conc. per unit of inoculum.

—A.S.

WHITTEM, J. H. (1953). **Recent advances in the control of animal virus diseases (with special reference to canine distemper).**—*Aust. vet. J.* **29,** 109-114. **2840**

A review of developments in the fields of therapy and prohylaxis.

W. discussed therapy with reference to antiviral sera, the interference phenomenon, and the use of antibiotic and chemotherapeutic agents. Of 4,000 compounds known to have been screened for antiviral activity none has

been discovered with specific and potent effect on the small viruses. Viruses of the psittacosis-lymphogranuloma group are, however, susceptible. In diseases caused by viruses other than members of this group, these agents are likely to be of no value except in controlling secondary bacterial infections.

The degree and duration of natural antiviral immunity were discussed with reference to the influence of the pathogenesis of the disease, antigenic heterogenicity and the nature of the tissue response.

The commonly used methods of vaccination were discussed along with their shortcomings. The advances of the last few years in the development of virus vaccines were given. An ideal vaccine should be of living attenuated virus, capable of multiplying in the animal body to produce a strong antigenic stimulus leading to lifelong immunity. It should be innocuous, even in the presence of intercurrent disease, sufficiently stable for field use, incapable of spreading the natural disease, and able to confer immediate protection. The vaccine should be economical to produce, be a one dose vaccine, and should contain all antigenic types of the virus.

More recently a number of new vaccines have been produced which satisfy some of these requirements. They are avianized and/or lapinized vaccines against rinderpest, swine fever, rabies, canine distemper and bluetongue. Three strains of canine distemper virus have been adapted to grow in the chick embryo, and avianized virus is apparently giving good results in field trials.—K. G. JOHNSTON.

I. LEVADITI, C. (1951). Pour quelles raisons les antibiotiques n'agissent-ils pas sur les ultravirus? **[Reasons why antibiotics have no action on ultraviruses.]**—*Pr. méd.* **60,** 133-135. **2841**

II. LEVADITI, C. (1952). L'ehrlichine antibiotique non bactériostatique et non microbicide mais nettement virulicide. **[Ehrlichine, an antibiotic active against viruses but inactive against bacteria.]**—*Ibid.* 761-762. **2842**

I. Having briefly summarized the experimental and clinical work done by himself and others on the activity of aureomycin, chloramphenical and terramycin against rickettsia and on their almost complete lack of activity against ultraviruses, L. speculated on the possible reasons for the latter.

On the technical plane, he argued that since the large-scale screening of soil organisms had entirely concentrated on activity against bacteria, rickettsia and the larger viruses, some of the antibiotics rejected as inactive against these might possibly have proved active against ultraviruses, had they been so investigated.

This hypothesis was, however, discarded in the course of a subsequent discussion of the structural and biological properties of ultraviruses, their vastly more primitive nature, their apparent lack of enzyme systems and their dependence upon the host cell for their activity. L. argued, in the light of present knowledge, that antibiotics with antibacterial and antirickettsial activity are inactive against ultraviruses because they cannot inhibit their growth, can find no enzyme systems upon which to act in them, cannot penetrate the host cell and are thus unable to impinge upon the disturbance in nucleoprotein synthesis which appears to be an essential feature of cells inhibited by an ultravirus.

L. concluded by forecasting that any antibiotic which might in future be discovered as being active against ultraviruses would most probably prove inactive against the other types of micro-organism. [Confirmation of this theory is contained in a later paper announcing Waksman's discovery of "Ehrlichin" (1951). *Bact. Proc.* 29].

II. L. described the mild activity of the antibiotic ehrlichine against the viruses of Newcastle disease, avian infectious bronchitis, influenza type A, vaccinia, and against feline pneumonia virus and discussed it in the light of his earlier speculations and forecasts [see I *supra*.]—G. P. MARSHALL.

BERGE, T. O. & LENNETTE, E. H. (1953). **World distribution of Q fever: human, animal and arthropod infection.**—*Amer. J. Hyg.* **57,** 125-143. **2843**

A world list of countries in which Q fever or its causative organism has been reported. *R. burneti* has been recovered in many parts of the world from human beings, cattle, sheep, goats, bandicoots, body lice, ticks, and dust in the vicinity of infected animals.—A.S.

I. VIGNALI, L. & DURANTI, G. (1952). Ricerche sierologiche sulla rickettsiosi burnetii in provincia di Arezzo. **[Serological research on Q fever in the Arezzo Province.]**—*Zooprofilassi.* **7,** 215-221. [English, French and Spanish summaries.] **2844**

II. ANTONETTI, F. (1952). Ricerche sperimentali sulla rickettsiosi burnetii del cane. **[Experimental research on Q fever in dogs.]**—*Ibid.* 249-254. [English and Spanish summaries.] **2845**

I. In areas where there has been no human case of Q fever, 152 out of 1259 (12%) sheep sera examined were positive to the complement fixation test for *R. burneti*. In areas where the disease existed in man, the sera of 2 horses, 16 cattle, 128 sheep, 6 goats and 8 dogs were examined. Six sheep and 2 dogs gave positive results. The authors concluded that there was no correlation between the extent of human and animal infection with *R. burneti* in the areas examined.

II. Three dogs were infected with *R. burneti* by ingestion of placentas from infected sheep. The causal organism was recovered from the dogs' milk up to 30 days, and the urine up to 70 days, after infection. It was present in the visceral organs and bone marrow.

—B. Baldelli.

Davoli, R. & Rosati, T. (1952). Seminario sulla epidemiologia della febbre Q in Italia. (Perugia, 10-11 Ottobre 1951.) **[Conference on the epidemiology of Q fever in Italy.]**—*Ann. Sanità Pubbl.* **13**, 3-65. **2846**

The main subjects discussed were the status of distribution of Q fever in Italy, the mechanism of contagion, the value of sero-diagnostic reactions and the problems of prophylaxis. It was concluded that it was necessary to institute a system of notification of clinical cases confirmed serologically and that serological reactors among animals in districts where human cases occur should be reported. Provincial laboratories would be asked to make epidemiological inquiries on each proved case and to carry out routine serological testing. Pilot investigations on human beings and animals in small areas would be useful. Standardization of the c.f. test was considered to be urgently required and would be undertaken. Veterinary police measures might be applied experimentally. Research on the mechanism of contagion would be encouraged and supported by the public health commission.

—B. Baldelli.

Monaci, V. & Nuvolone, U. (1953). Sulla frequenza di anticorpi contro la *R. burneti* negli animali da macello e negli animali da latte. **[Frequency of *R. burneti* antibodies in domestic animals.]**—*Bol. Ist. sieroter., Milano.* **32**, 62-64. [English summary.] **2847**

One thousand and seventy-eight blood samples from sheep, cattle, horses and pigs at the Milan abattoir were submitted to the c.f. test for Q fever; 42% of the sheep, 9% of the goats, 4% of the cattle and 0·6% of the pigs yielded positive reactions. In a further series on milk-producing animals, 5% from cows and 33% from goats yielded positive reactions.

Berge, T. O. & Lennette, E. H. (1953). **Q fever: a study of serological relationships among strains of *Coxiella burneti* (Derrick).**—*Amer. J. Hyg.* **57**, 144-169. [Abst. from authors' summary.] **2848**

Strains of *R. burneti* isolated in the U.S.A. from sheep, goats, cows and ticks were compared with each other and with standard strains of *Rickettsia burneti* by means of the c.f. antibody absorption tests. Antigens were found to differ widely in their sensitivity as complement-fixing antigens when tested with early convalescent sera, but in many instances to be almost equally effective when tested with sera taken some months after recovery. Results of both tests indicated that a number of antigenic compounds were common to all strains.

Sensitive strains were characterized by the property of showing the same antigen unit dilution value whether titrated against homologous or heterologous g. pig antisera, or against early or late human or g. pig convalescent sera. In the case of less sensitive strains, the concentration of antigen constituting one unit decreased with increasing time after recovery from the infection.

Weyer, F. (1950). Über die Wirkung von "Tego 103" auf Rickettsien. (Zugleich ein Beitrag zur Frage der Empfindlichkeit von Rickettsien.) **[Sensitivity of *Rickettsia* organisms to "Tego 103".]**—*Z. Tropenmed. u. Parasit.* **1**, 586-594. [English summary.] **2849**

"Tego 103" (a disinfectant containing higher molecular derivatives of amino acids) was tested on *R. prowazeki* and on *R. burneti*. Whereas *R. prowazeki* was killed after about 5 min., *R. burneti* resisted for 24 hours and was finally killed after 48 hours.—E.G.

Korshunova, O. S. & Piontkovskaya, S. P. (1949). **[A *Rickettsia*-like organism isolated from *Hyalomma marginatum marginatum* Koch.]**—*Zool. Zh.* **28**, 186-187. [In Russian.] **2850**

Immature and adult *H. marginatum* were collected from hares, a wild duck, cattle and from the ground in areas of Crimea where human haemorrhagic fever existed. The ticks and their progeny were fed on g. pigs which developed fever. Examination revealed hyperaemia of various organs and in the tunica vaginalis rickettsia-like organisms were found. G. pigs injected i/p with a 2–4 ml. suspension of ticks had similar pathology.

In cross-immunity tests the Crimean strains gave no immunity against spotted fever strains from other parts of the U.S.S.R.; but all these gave immunity against the Crimean variety.
—F.A.A.

See also absts. **2794** (infectivity of viruses); **2873** (viral theory of cancer); **2874-2875** (fowl sarcoma); **2876** (transmission of fowl paralysis by killed Newcastle disease vaccine); **2967** (book, diseases of sheep and goats).

IMMUNITY

KATITCH, R. V. (1953). Action synergique de l'antigène dans l'immunisation avec des antigènes polyvalents. **[Synergic action of polyvalent antigens.]**—*Rev. Immunol.* **17,** 30-40. **2851**

K. inoculated rabbits with 4 infective agents singly and in combinations of 2, 3 and 4 together, later bleeding them to compare the titres of each antibody produced. The highest titres were achieved when an antigen was administered in combination with one or two others: the resulting titres were considerably lower when 4 antigens were inoculated together, or when only a single antigen was given.—A.S.

HOWIE, J. W., BARR, M. & GLENNY, A. T. (1953). **The effect of diet and of the interval between toxoid injections upon diphtheria-antitoxin levels in Blackface ewes and their lambs.**—*J. Path. Bact.* **65,** 143-154. [Authors' summary modified.] **2852**

Thirty-nine pregnant ewes grazing rough pastures were immunized during the second half of gestation by two injections of diphtheria alum-precipitated toxoid (A.P.T.), at an interval of 4 or 9 weeks. Nineteen of the 39 ewes received daily 1 lb. of a dietary supplement of oats and linseed-cake meal; the other 20 ewes received no supplement and were used as controls.

Among the ewes which had a 4-week interval between the two injections of A.P.T., those given the dietary supplement produced more diphtheria antitoxin than those not given a supplement. The higher antitoxin levels of the supplemented group were apparent on measuring the secondary response in the blood, the level in the colostrum, and the level of passive antitoxin acquired by their unweaned lambs.

Among the ewes which had a 9-week interval between injections, immunization was more efficient, especially as judged by the level of circulating antitoxin one year after the second injection of A.P.T.; among these animals no effect of the dietary supplement on antitoxin production could be detected.

THORBECKE, G. J. & KEUNING, F. J. (1953). **Antibody formation *in vitro* by haemopoietic organs after subcutaneous and intravenous immunization.** — *J. Immunol.* **70,** 129-134. **2853**

Fragments of spleen, bone marrow, liver, thymus and lymph nodes from rabbits immunized with *S. paratyphi B* vaccine were cultivated in roller tubes for 24 hours. Antibody production was demonstrated in the red and white pulp of the spleen, and in the bone marrow and lymph nodes, but no antibody was produced in cultures of thymus and liver. With the technique used, the red pulp of the spleen was found to play the major part in antibody formation, both after s/c and after i/v immunization.—A.S.

TERZIAN, L. A., STAHLER, N. & MILLER, H. (1953). **A study of the relation of antibiotics, vitamins and hormones to immunity to infection.**—*J. Immunol.* **70,** 115-123. [Abst. from authors' summary.] **2854**

Working with the mosquito *Aedes aegypti* the authors demonstrated that penicillin, chloramphenicol and tyrothricin, ascorbic acid, insulin and thyroxin, and the plant hormones indole-3-acetic acid, and β-naphthaoxyacetic acid administered in the diet, all increased the susceptibility to infection with *Plasmodium gallinaceum*. On the other hand, terramycin, thiamin, niacin, calcium pantothenate, biotin, and A.C.T.H. all increased the resistance of the mosquito to this parasite.

The concentration of the substance used was a critical factor since in certain cases a compound producing an increase in resistance at one particular level of concentration produced the opposite effect at another level.—A.S.

LEMBACH, K. & SCHRÖDER, E. (1952). Zur Blutgruppen- und Faktorenforschung in der Veterinärmedizin. **[Blood groups and blood factors in veterinary medicine.]**—*Mh. prakt. Tierheilk.* **4,** 241-246. **2855**

A very brief review of the history of blood transfusion in man and animals and of some of the principal work on blood groups in animals. It is not critical or exhaustive and does not include work done since the second world war. The names of the authors and dates of the papers cited are given in the text, but no list of references is provided.
—G. FULTON ROBERTS.

HERXHEIMER, H. & ROSA, L. (1953). **The protective effect of sympathomimetic amines and of aminophylline in the anaphylactic microshock of the guinea-pig.**—*Brit. J. Pharmacol.* **8**, 177 - 180. [Authors' summary modified.] **2856**

The protective effects of aminophylline, adrenaline, noradrenaline, isoprenaline, neosuprel, cobefrin, ephedrine, and methylephedrine in mild anaphylactic shock of the g. pig were investigated.

Aminophylline was the only substance which gave full protection: the other substances, in non-toxic doses, conferred only partial protection. Cobefrin was not protective.

The order of efficiency of these substances was approximately the same as that observed in human asthma.

The dose-response curve for certain of these substances was, as for most antihistamines, sigmoid.

See also absts. **2749-2751** (TB.); **2760** & **2761** (swine erysipelas); **2778** (pullorum disease); **2781-2783** (brucellosis); **2789** (caprine contagious pleuro-pneumonia); **2800** (trypanosomiasis); **2817** (F. & M. disease); **2820** (rabies); **2833** & **2840** (distemper); **2837** (Newcastle disease); **2847-2848** (Q fever); **2876** (transmission of fowl paralysis by killed Newcastle disease vaccine); **2898** (anaphylaxis and periodic ophthalmia).

PARASITES IN RELATION TO DISEASE [ARTHROPODS]

WIGGLESWORTH, V. B. (1950). **Insect physiology.** pp. x+134. London: Methuen & Co. Ltd.; New York: John Wiley & Sons, Inc. 4th Edit. 4s. 6d. **2857**

The object of this little book is to provide a concise account of the varied functions of insects. The author has confined himself to aspects of fundamental physiology which are described in a very readable manner. Nevertheless the account is carefully related to the species which have been studied and points requiring further elucidation are indicated. The fact that the book is now in its fourth edition suggests that it has amply succeeded in its aims.

—L. P. JOYNER.

BERTRAM, D. S., ROBERTS, E. W. & EDWARDS, H. (1952). **A rapid method of sampling for *Damalinia* (*Bovicola*) *bovis* L. on cattle, and its use in a comparison of the effectiveness of 'gammexane' and DDT against this parasite.**—*Ann. trop. Med. Parasit.* **46**, 7-24. **2858**

The authors described a simple method for the estimation of louse infestation in cattle:—

A piece of lint is placed over the chosen site and then warmed by pressing an electric heater pad firmly against it for 2 min. Some of the lice (*D. bovis*) transfer themselves to the lint, and the number doing so may be taken as an indication of the number present on the skin. The method is very useful in comparing populations before and after various insecticidal treatments.

Benzene hexachloride (B.H.C.) and D.D.T. were compared in this way, sampling being done at 24-hour intervals after the insecticide had been applied by sponging:—B.H.C. (0·01% soln.) killed nearly all lice within 3 days though a few appeared later, some apparently freshly hatched, while others were older and must have escaped the action of the insecticide. D.D.T. (0·1% soln.) killed nearly all within 5 days. D.D.T. at 0·01% conc. was completely ineffective.

COOPER, F. A. (1953). **Sheep dipping, showering or spraying?**—*Agriculture, Lond.* **60**, 80-83. **2859**

It is not yet possible to make firm recommendations on the best method of applying sheep dips, but showering and spraying promise to be very efficient when used for controlling myiasis.—G. B. S. HEATH.

UNSWORTH, K. (1952). **The ixodid parasites of cattle in Nigeria, with particular reference to the Northern Territories.**—*Ann. trop. Med. Parasit.* **46**, 331-336. **2860**

Ticks were collected from cattle throughout Nigeria, and identified. The results of this survey indicated that there were 17 species of ticks attacking cattle, and that they belonged to the genera, *Amblyomma, Boophilus, Haemaphysalis, Hyalomma,* and *Rhipicephalus.* The species most commonly found were *A. variegatum, B. decoloratus, Hyalomma transiens, R. sanguineus,* and *R. simus.*—D. W. JOLLY.

RAM MOHAN RAO, S. (1949). **Observations on the bionomics of Hunterellus hookeri How. (Hymenoptera), an insect parasite of ticks, together with a note on its distribution.**—*Bombay Vet. Coll. Mag.* **1**, 11-15. **2861**

R. described the bionomics of *H. hookeri,* a chalcidoid parasite of ticks. The possibility of using them in the biological control of ticks in India is being studied.—P. R. K. IYER.

WIESMANN, R. & LOTMAR, R. (1949). Beobachtungen und Untersuchungen über den Wirkungsbereich des neuen Repellent "Kik-

Geigy ". **[Repellent action of " Kik-Geigy " against arthropods.]**—*Acta trop. Basle.* **6,** 292-349. [In German. English and French summaries.] **2862**

The repellent action of " Kik-Geigy " [composition not given] was tested under field and laboratory conditions against mosquitoes, tabanid flies, fleas, bedbugs and larvae of *Ixodes ricinus* and conferred protection against bites for periods from 4–10 hours. Against *Anopheles quadrimaculatus, Musca domestica, Stomoxys calcitrans, Glossina palpalis, Rhodnius prolixus* and *Pediculus humanus,* however, it proved unsatisfactory.—E.G.

See also absts. **2799** (transmission of trypanosomes by non-biting flies); **2803** (tsetse flies); **2843** (recovery of *R. burneti* from lice and ticks); **2850** (*Hyalomma*); **2967** (book, diseases of sheep and goats).

PARASITES IN RELATION TO DISEASE [HELMINTHS]

LURIE, H. I. & DE MEILLON, B. (1951). **Skin tests for schistosomiasis.**—*S. Afr. med. J.* **25,** 321-324. **2863**

An account of the use of an allergic test for schistosomiasis in human beings. Of 28 proved cases only 26 were positive to the test. Some subjects not suffering from schistosomiasis reacted positively.—JAS. G. O'SULLIVAN.

SCHULZE, W. (1952). Beobachtungen bei Bandwurmkuren bei Hunden. **[Treatment for tapeworms in dogs.]**—*Mh. VetMed.* **7,** 128-131. **2864**

A general discussion concerning the treatment of tapeworm infestation in dogs, seven species being listed, with arecoline hydrobromide, male fern and certain proprietary anthelmintics.—M. L. CLARKE.

BECKER, B. J. P. & JACOBSON, S. (1951). **Infestation of the human brain with *Coenurus cerebralis*. Report of a fourth case.**—*Lancet.* **261,** 1202-1204. [Abst. from authors' summary.] **2865**

The authors described a case of infestation of the human brain by *C. cerebralis* [see also *V.B.* **22,** 457], giving details of the structure of the scolex and the hooklets. To prevent confusion with cysticercosis it is necessary to examine the larva histologically.

BULL, P. C. (1953). **Distribution of the nematode *Trichostrongylus retortaeformis* (Zeder, 1800) in the wild rabbit, *Oryctolagus cuniculus* (L.).**—*N.Z. J. Sci. Tech.* Sect. B. **34,** 449-456. [Author's summary modified.] **2866**

The distribution of the nematode *T. retortaeformis* was studied in 150 stomachs and 17 intestines from wild rabbits, in New Zealand. Nine intestines were examined in detail by cutting them into 5-cm. lengths and counting the numbers of worms in each. The mean distribution had the form of a right-skewed frequency curve with the mean of 22·06 cm. from the pylorus, and 98% of the worms occurred in the first 90 cm. of the intestine. The distribution varied to some extent in different rabbits, and possible reasons for this were discussed. Eighty-seven per cent. of the rabbits harboured small numbers of worms (usually less than 3% of the total) in the posterior half of the small intestine. *T. retortaeformis* occurred in one stomach, *T. axei* in another, and *Trichostrongylus* sp. in a third.

GOLDBERG, A. (1951). **Life history of *Oesophagostomum venulosum*, a nematode parasite of sheep and goats.**—*Proc. helminth. Soc., Wash.* **18,** 36-47. **2867**

The duration of preparasitic and parasitic stages was determined. The average prepatent period in 10 infestations was 28 days, and in 10 administrations of an average of 1,840 larvae to a lamb, the patent period lasted 117 days. The egg count rose rapidly during the first month of patency, reaching its peak 60–65 days after infestation, remained high for a week then fell to a low level until the end of the patent period. G. believes that the fall was related to the length of life of the worm rather than to the development of immunity.

The optimal infesting dose as 350 larvae, doses above 1,000 larvae causing excessive host reaction with elimination of the parasites.

—JAS. G. O'SULLIVAN.

RAMANUJACHARI, G. & ALWAR, V. S. (1952). ***Thelazia bubalis* n.sp. from an Indian buffalo (*Bos bubalis*).**—*Indian vet. J.* **29,** 97-100. **2868**

A species of *Thelazia* having a cup-shaped buccal capsule was found in a conjunctival abscess of a buffalo-calf. The male was 6 mm. and the female 6·5 to 7·8 mm. in length. The authors proposed that it be designated *Th. bubalis* n.sp. They compared species of *Thelazia* from various animal hosts.

—G. L. SHARMA.

KREIS, H. A. (1952). Helminthologische Untersuchungen in schweizerischen Tierpärken und bei Haustieren. **[Investigation of helminth**

infestation of domestic animals and of zoo animals in Switzerland.]—*Schweiz. Arch. Tierheilk.* **94,** 499-522 & 556-583. [English, French and Italian summaries.] **2869**

Faeces were collected from 1,256 animals in two zoological gardens, one menagerie and on various farms, 217 species being represented, the majority of them mammals. The faeces samples were examined qualitatively by a sedimentation method. Incidence and significance of helminths in the different classes of animals, and in some of the species, was tabulated, with references to the literature. A section (pp. 570–580) was devoted to identification of eggs and larvae, of which 47 diagrams were given.—R.M.

NAGATY, H. F. (1949). **A revised list of the helminth parasites of man and food mammals in Egypt.**—*J. roy. Egypt med. Ass.* **32,** 423-425. **2870**

A check list of the parasites as set out in the title, arranged under the names of the following hosts:—man, camel, bovines and sheep.

—JAS. G. O'SULLIVAN.

See also abst. **2967** (book, diseases of sheep and goats).

SPONTANEOUS AND TRANSMISSIBLE NEOPLASMS AND LEUCAEMIAS [INCLUDING FOWL PARALYSIS]

SHAW, I. G. & HAYES, H. (1953). **A case of lipomatosis in a bull and its possible interference with ability to serve.**—*Vet. Rec.* **65,** 203. [Authors' summary modified.] **2871**

A report of abnormal service behaviour in a pedigree Red Poll bull which on P.M. examination was found to be associated with lipomatosis of the abdominal organs. An attempt was made to correlate lesions and symptoms.

EYESTONE, W. H. (1951). **Myelogenous leukemia in the cat.**—*J. nat. Cancer Inst.* **12,** 599-613. **2872**

A seven-year-old male cat, which had been listless and losing weight over a period of 6 weeks, showed marked anaemia, and white cell counts of 43,100 to 59,950. There was an increase of intermediate forms of myeloid blood cells in addition to large numbers of primitive stem-cell types. Mitoses were observed in the leucaemic cells in the peripheral blood, and Heinz bodies were present in 43% of the circulating red blood cells. At P.M. examination, the bone marrow showed leucaemic cells, and leucaemic infiltrations were present in the liver, kidneys, spleen and lymph nodes.

—E. COTCHIN.

RUSSELL, W. O. & WYNNE, E. S. (1951). **The viral theory of cancer: evaluation of some recent work.**—*Amer. J. med. Sci.* **222,** 485-493. **2873**

A critical review of recent work on the role of viruses in the neoplastic process.—E.G.

KENZY, S. G. (1952). **Studies in avian neoplasia. I. A quantitative evaluation of neutralizing antibodies for the Rous sarcoma virus in avian serums.**—*Amer. J. vet. Res.* **13,** 388-394. **2874**

The quantities of Rous sarcoma neutralizing antibodies present in avian serum samples were expressed in terms of neutralizing doses per ml. of serum. A neutralizing dose was defined as the amount of serum necessary to prevent one minimum infective dose of virus from developing more than a stated degree of tumour formation. Over 1,000 serum samples were examined.—R.M.

CARR, J. G. (1953). **The association of haemin with the fowl cancer viruses.**—*J. gen. Microbiol.* **8,** 427-433. [Author's summary copied *verbatim*.] **2875**

Haemin was found in all specimens of purified preparations of Rous I, Duran-Reynals B, D and V, Fujinami, and MH 2 viruses, and also in macromolecular preparations from non-filterable fowl sarcomas and normal fowl tissues. The amounts were not constant in different batches of Rous I, and it was shown that this virus would strongly adsorb pure haemin from solution. It is suggested that most, probably all, of the haemin encountered in these preparations was derived from the host blood. Adsorbed haemin had no effect on the oxidative destruction of the virus, but slightly altered its physical properties.

GÁLLEGO PIEDRAFITA, J. (1952). La leucosis aviar y algunas vacunas muertas. **[Transmission of fowl paralysis by killed Newcastle disease vaccine.**]—*Bol. Divulg. Ganad. Esp.* **7,** Nos. 76, 77 & 78. pp. 31-34. **2876**

The author recorded the appearance of fowl paralysis in a flock in its various clinical manifestations, 20 days after injection with formolized Newcastle disease vaccine. He suggested that contaminated vaccine was responsible for the transmission of this and other outbreaks.

—I. W. JENNINGS.

LARSON, D. L. & TOMLINSON, L. J. (1953). **Quantitative antibody studies in man. III. Antibody response in leukemia and other malignant lymphomata.**—*J. clin. Invest.* 32, 317-321. [Authors' summary copied *verbatim*.] 2877

Antibody formation to pneumococcus capsular polysaccharides I and II has been studied in a group of human subjects with leukemia and other lymphomatous disease, using quantitative immunochemical techniques. Nine of 11 patients with untreated acute leukemia had unusually large antibody responses. These responses were impaired in seven patients with acute leukemia receiving cortisone. Eight of nine patients with chronic lymphatic leukemia exhibited little or no antibody response. Seven patients with chronic myeloid leukemia, three patients with Hodgkin's disease, and four patients with lymphosarcoma had antibody responses essentially within the normal range.

NUTRITIONAL AND METABOLIC DISORDERS

AGRAWALA, I. P., DUNCAN, C. W. & HUFFMAN, C. F. (1953). **A quantitative study of rumen synthesis in the bovine on natural and purified rations. I. Protein, dry matter and non-protein nitrogen.**—*J. Nutr.* 49, 29-39. [Authors' summary modified.] 2878

An account of experiments with three rumen-fistulated calves maintained on a purified ration with urea as the only source of nitrogen and one calf maintained on a natural ration, to determine the rate of disappearance of dry matter and non-protein nitrogen from the rumen, and to study the biosynthesis of protein.

The entire rumen contents were evacuated, weighed, sampled and replaced in the rumen both before and 6 hours after feeding. On a percentage basis, rumen dry matter and non-protein nitrogen increased appreciably within 6 hours after feeding, but crude protein increased in only 4 of 7 trials.

The rate of removal of dry matter was approx. the same irrespective of the ration fed, and 90% of the non-protein nitrogen disappeared from the rumen within 6 hours after feeding.

The data indicated an appreciable synthesis of protein from urea in the bovine rumen within 6 hours after feeding. In 7 trials, the amount of "true" protein synthesized varied from 33 to 109 g. The increase in protein was assumed to be due to the biosynthetic activity of rumen micro-organisms.

GIAJA, A. (1952). Sur la consommation alimentaire dans la lutte contre la chaleur. **[Nutrition and body temperature.]**—*C. R. Acad. Sci., Paris.* 235, 818-820. 2879

The ration necessary to maintain a dog had to be more than doubled when the ambient temperature fell from the summer level of 28°–33°C. to 23°–26°C. This supports laboratory experiments showing a lower basal metabolism when the environmental temp. is above the optimum.—A. SEAMAN.

SWAHN, O. (1950). Kan våminnehållet från nötkreatur utnyttjas som fodermedel åt svin? **[The use of ruminal contents from slaughtered cattle as food for pigs.]**—*Skand. Kreatursförsäkrings.* pp. 167-174. [English summary.] Published by *Medd. Stat. vet.-med. Anst. Stockh.* (1950). 2880

Ruminal contents from slaughtered cattle have a quite high protein and vitamin B content. In a small experiment pigs fed a diet including ruminal contents grew more slowly than controls receiving skim milk. The cost of producing 1 kg. of pork was, however, lower with the rumen contents (Kr. 0·96 per kg. as compared with Kr. 1·15 per kg. in the skim milk group).—H. BOYD.

TABENKIN, B., COOPERMAN, J. M., DRUCKER, R. E. & JENKINS, E. M. (1953). **Effect of feeding several sulfonamides and related compounds on growth of chicks.**—*Proc. Soc. exp. Biol., N.Y.* 83, 88-91. [Authors' summary modified.] 2881

Young chicks fed diets containing sulphisoxazole at levels of up to 1% of the diet showed no physical abnormalities, were more uniform and thrifty in weight and appearance than the controls and weighed heavier than the controls at 6 weeks of age. Young chicks fed diets containing 0·03% of 4-phenyl-4-sulphanilyl-2-butanone or from 0·03% to 0·3% of β-phenyl-β-sulphanilyl-propiophenone were also thriftier in appearance and heavier than the controls and showed no physical abnormalities. Young chicks fed diets containing 1% or 0·3% of sulphamethazine, sulphadiazine, sulphanilamide, sulphaguanidine or sulphaquinoxaline were markedly retarded in their growth.

PEIRCE, A. W. (1952). **The influence of the amount of starch on the utilisation of urea by sheep.**—*Aust. J. agric. Res.* 2, 447-456. [Abst. from author's summary. See also *V.B.* 23, 2345.] 2882

An account of a study of the effect on the wool production of Merino sheep following the addition of urea to a ration low in protein but containing varying amounts of dehydrated potatoes as a source of starch. The low-protein ration contained 7 to 9 g. nitrogen, the urea supplement was given at the rate of 15 g. daily, equivalent to approx. 7 g. N, and the potatoes were supplied at levels of 50, 100, 150, and 200 g. daily.

When 100 g. or more of dehydrated potatoes were added to the ration an increase occurred in the amount of wool produced which was proportional to the amount of potatoes in the ration. The increases were 7, 19, and 23% with 100, 150, and 200 g. potatoes respectively. When a mixture of red palm oil and peanut oil was added to the diet, the increases in wool production were 9, 15, and 15% with 100, 150 and 200 g. potatoes respectively. Wool production did not increase when 50 g. potatoes were fed, either with or without oil. The increases in total wool production were accompanied by increases in fibre diameter. The max. increase in the latter was 6%; this was attained when 200 g. potatoes were fed.

ANON. (1953). **The incidence of cobalt deficiency in the Irish Republic. (A summary of the proceedings of a symposium held in Dublin on December 4th, 1952).**—*Irish vet. J.* **7,** 62-76. **2883**

Experimental work has confirmed that pining syndromes of cattle and sheep which occur in some areas are primarily due to a deficiency of cobalt, and respond to its application to the animals or pasture. With a few exceptions about 2·5 p.p.m. Co in the soil is the critical level. Pining in sheep occurs where Co content of herbage is below 0·08 p.p.m. and in cattle when below 0·05 p.p.m.

—W. H. PARR.

COLLINS, R. A., BODLT, R. E., ELVEHJEM, C. A. & HART, E. B. (1953). **The influence of trace-mineralized salt upon the vitamin B_{12} and folic acid content of goat's milk.**—*J. Dairy Sci.* **36,** 29-32. [Authors' summary modified.] **2884**

Goats receiving a mineral mixture (containing cobalt), compared with others receiving only iodized salt, were observed to have a higher level of vitamin B_{12} in their colostrum and milk during the first week *post-partum*. The mineral mixture or a 50-mg. supplement of cobalt per goat per day had no influence upon the level of this vitamin in the goat's milk after this time.

The addition of trace-minerals to the diet of the goat did not influence the free folic acid level of the goat's milk.

WALSH, T., NEENAN, M. & O'MOORE, L. B. (1953). **High molybdenum levels in herbage on acid soils.** [Correspondence.]—*Nature, Lond.* **171,** 1120. **2885**

It had been suggeted that excessive uptake of molybdenum by plants, leading to symptoms of copper deficiency in grazing animals, is associated with high soil pH. However, the authors described a case where the phenomenon occurred on an acid soil.—N. DEAN.

DICK, A. T. (1953). **The effect of inorganic sulphate on the excretion of molybdenum in the sheep.**—*Aust. vet. J.* **29,** 18-26. **2886**

Experiments involving extraction and fractionation of extracts of lucerne chaff revealed that the low levels of blood molybdenum and high rates of urinary molybdenum excretion in sheep fed on lucerne chaff and receiving, in addition 10 mg. molybdenum daily were caused by a constituent of the soluble ash fraction. All the activity was localized in the sulphate fraction. Potassium sulphate, given orally or intravenously, caused a prompt reduction in the high blood molybdenum levels and a large increase in urinary molybdenum excretion in sheep fed on oaten chaff plus 10 mg. molybdenum per day. Potassium chloride had no effect. The difference between the effects of chaffed lucerne hay and oaten hay on the blood molybdnum level of sheep on an intake of 10 mg. molybednum per day is attributed to the high content of sulphate in lucerne chaff.

D. discussed the possibility that the difference between these two diets in their effect on copper storage in sheep and its limitation by molybdenum may also be due to their difference in sulphate content.—R. L. REID.

CORDIEZ, E. (1952). Les réserves en vitamine A du porcelet nouveau-né. **[The vitamin A reserve of the new-born pig.]**—*Ann. Méd. vét.* **96,** 141-158. **2887**

A detailed critical review of the literature, with 46 references.—J. T. DONE.

HIGNETT, S. L. & HIGNETT, P. G. (1953). **The influence of nutrition on reproductive efficiency in cattle. III. The influence of the vitamin D status on the effect of calcium and phosphorus intake on the fertility of cows and heifers.**—*Vet. Rec.* **65,** 21-24. **2888**

In 787 cows from 39 herds there was no significant variation in fertiilty throughout the

winter of 1949-50. When vitamin D intake was low the conception rate decreased with a widening of the Ca/P ratio. This was more apparent when the phosphorus intake was low.

When the phosphorus intake was high a widening of the Ca/P ratio was associated with increased fertility particularly if the vitamin D intake was low.—J. M. SWANNEY.

GUGGENHEIM, K. & SHAMIR-ZERNIK, R. (1953). **The riboflavin-sparing action of atabrine.**—*J. biol. Chem.* **202**, 331-337. [Authors' summary copied *verbatim*.] **2889**

Atabrine administered at a level of 400 to 800 mg. per kilo of ration was found to exert a sparing action on riboflavin in rats. The drug increases the excretion of riboflavin in the urine and promotes the growth of young animals given suboptimal amounts of riboflavin.

The increased riboflavin excretion in atabrine-treated rats is not associated with an increased urinary excretion of nitrogen.

RONNING, M., BEROPSEK, E. R., KUHLMAN, A. H. & GALLUP, W. D. (1953). **The carotene requirements for reproduction in Guernsey cattle.**—*J. Dairy. Sci.* **36**, 52-56. [Authors' summary modified.] **2890**

The efficiency of reproduction as related to carotene intake was studied for a period of 8 years with a small herd of Guernsey cows, 72 gestation periods being observed. The sole source of carotene in the rations was prairie hay fed in such amounts that the daily carotene intake varied from 30 to 150 μ g./lb. body wt.

It appeared that minimum safe level of carotene intake for successful reproduction in Guernsey cattle was 90 ug./lb body wt. daily. In order to lessen the risk of abortions and on the basis of other indications at present under study, it appeared desirable to guarantee this minimum level of intake during the entire gestation period. No definite relationship appeared to exist between the level of carotene intake and the conception rate as measured by services per conception. There was a low correlation between carotene intake and carotene blood plasma levels and butterfat carotene.

WESTERMARCK, H. (1946). I. Mineralämnesbrist och äggviteutfodring som orsak till paretiska tillstånd hos de finska korna i Norrland. II. Hypokalcämier och kalciumterapi vid paretiska tillstånd hos ko. **[I. Mineral deficiency and protein feeding as cause of paretic conditions in Finnish cows in Norrland (Sweden). II. Hypocalcaemia and calcium therapy in paretic conditions in cows.]** —*Suom. Eläinlääkäril.* **52**, 71-91 & 91-110. [In Swedish. English summary.] **2891**

I & II. During the second world war the incidence of puerperal paresis in cattle in Sweden decreased from 15,786 cases in 1939 to 7,245 in 1941 when supplies of concentrates were scarcest.

Among the 15,000 dairy cows evacuated from northern Finland to Norrland, Sweden, for 10 months while Finland was at war with Germany, a total of 450 cases of paresis occurred; in 214 cases the cows were not pregnant. Mortality from puerperal paresis was 9·2% in early winter and 12·0% in late winter, the corresponding figures for paresis without pregnancy being 37·7% and 30·1% respectively. The incidence was highest where the feed was richest in proteins and the hay ration small and deficient in minerals. Where the diet included a high proportion of good hay from southern Sweden very few cases occurred.

W. compared the clin. picture in the two conditions and suggested that their aetiology is similar.

Finnish cows have low blood calcium levels irrespective of their condition at parturition.

Injection of 70 g. calcium gluconate with 15 g. boric acid in 600 ml. distilled water was usually successful; in cases which failed to respond with a rise in the blood phosphorus level, prognosis was poor and combined Ca-Mg therapy and insufflation of the udder also failed.—F.E.W.

WARD, G. M., BLOSSER, T. H., ADAMS, M. F. & CRILLY, J. B. (1953). **Blood levels of some inorganic and organic constituents in normal parturient cows and cows with parturient paresis.**—*J. Dairy Sci.* **36**, 39-44. **2892**

The haematocrit value and the blood levels of pyruvic, lactic and citric acids, and calcium, sodium, potassium and chlorides were determined for 8 cows with milk fever, the determinations being carried out immediately before and approx. 5, 10, 15 and 30 days after treatment [not specified].

Before treatment the levels of calcium, sodium and citric acid were lower and the haematocrit value and the levels of potassium, chlorides and lactic acid higher than after treatment.

The control animals were 3 cows which calved normally. Blood samples were taken from them on the day of calving and afterwards at the same intervals as for the other animals.

The authors considered that their observations, if verified by work on a larger scale, might be of help in discovering the cause of milk fever.—A.S.

HOLMES, J. R. (1953). **Pregnancy toxaemia in grassland flocks.**—*Vet. Rec.* **65,** 299-303. [Author's summary modified.] **2893**

Clinical, biochemical and haematological observations on 29 cases of pregnancy toxaemia were described. The results indicated that the development of pregnancy toxaemia depends upon the relationship between foetal demands and maternal food supplies during pregnancy, particularly near term. The author considered that the disease could be prevented by supplying an adequate diet, particularly during the last 6 weeks of gestation. Other observations on normal flocks illustrated the desirability of supplementing natural food supplies at this time.

See also abst. **2854** (vitamins and immunity).

DISEASES, GENERAL

PALTRINIERI, S. (1951). Aggiornamenti di malattie infettive. [**Infectious diseases of domestic animals.**] pp. 335. Pisa: D. Tacchini e Figlio, 2nd Edit. [Price not stated.] **2894**

In this second edition, reproduced in cyclostyle, the editor, Dr. Farina, has amplified and brought up to date the material published a year previously. This consists of the class lectures on infectious diseases of animals in the Veterinary Faculty of the University of Pisa and includes talks on the general properties of viruses, and detailed accounts of foot and mouth disease, swine fever, Teschen disease, dog distemper, bovine infectious bronchitis, Newcastle disease, Q fever, brucellosis and swine erysipelas. There is also a short chapter on diseases communicable from animals to man. Within this rather restricted framework, the book provides an excellent and readable account of the subject, well up to the standard required by the veterinary student.—I. W. JENNINGS.

DONKER-VOET, J. & VAN DORSSEN, C. A. (1952). Overzicht der onderzoekingen van het uit de praktijk ingezonden ziektemateriaal over het jaar 1951. [**Material examined during 1951 at the Institute for Infectious Diseases of the University of Utrecht.**] — *Tijdschr. Diergeneesk.* **77,** 621-629. [English, French and German summaries.] **2895**

During the year, 1571 specimens were examined. *S. gallinarum* var. *duisburg* and *S. bareilly* were isolated from baby chicks. *S. gallinarum* var. *duisburg* was isolated also from the ovaries and eggs of spontaneously and experimentally infected fowls (i/m route). *S. bareilly* was isolated from chickens in Holland for the first time in 1949.

Of a total of 4,437 fowls examined P.M. over a period of 5 years only 46 were affected with TB.

Erysipelothrix rhusiopathiae was cultured from aborted swine foetuses.

—C. A. VAN DORSSEN.

DAVIS, L. R., BOWMAN, G. W. & PORTER, D. A. (1952). **Portable pens compared with other enclosures for control of diseases of dairy calves.**—*Vet. Med.* **47,** 485-490 & 512. **2896**

The authors discussed the design and construction of calf pens without flooring, that can be moved from place to place on the pasture. Observations over a period of ten years showed that the control of spontaneous clinical coccidiosis, helminth infestation, pneumonia and Johne's disease obtained with this method of calf raising was very satisfactory. Only individual pens with slatted floors approached movable pens in effectiveness.

—G. V. LAUGIER.

ISHITANI, R. (1950). [**Studies on the pathological anatomy of the serum horse. II. On the liver of the serum horse.**]—*Jap. J. vet. Sci.* **12,** 191-202. [English summary pp. 203-204.] **2897**

An account of the morbid histology of the livers of 78 serum horses in which no characteristic lesions were visible to the naked eye. In 70 of them there were various degrees of capillary changes, proliferation of the Kupffer cells and phagocytosis. Histologically the lesions could be related to the resorption of foreign protein; they were non-inflammatory changes of the reticuloendothelial system and differed from those seen in some cases of equine infectious anaemia.—KOGI SAITO.

BRION, A. (1948). La nature anaphylactique de la fluxion périodique du cheval. [**The role of anaphylaxis in periodic ophthalmia.**] — *Encyclopéd. vét. période.* **5,** 174-178. **2898**

B. discussed the results obtained by a group of workers in the Argentine. Periodic ophthalmia was produced experimentally in horses and was thought to result from anaphylaxis. Horses were sensitized with peptonized broth, and antigen was introduced in the form of dialysable proteins which provoked a local reaction. This

was followed by a refractory period which varied proportionately with the severity of the local reaction.—G. V. LAUGIER.

ROBINSON, E. M. & LAMBRECHTS, M. C. (1951). **An outbreak of an unusual type of cattle disease in the Vryheid district.**—*J. S. Afr. vet. med. Ass.* **22,** 201-202. 2899

On a single farm, 9 cattle died out of 10 which developed symptoms of inappetence and unthriftiness, terminating in abdominal pain and diarrhoea. The principal changes present P.M. were jaundice and bile stasis. No aetiological factor or agent was found, and no further cases occurred.—R.M.

MÜLLER, E. (1952). Zur Prognose der Peritonitis traumatica circumscripta bei konservativer Behandlung. **[Conservative treatment of traumatic peritonitis in cattle.]**—*Wien. tierärztl. Mschr.* **39,** 299-304. [English, French and Italian summaries.] 2900

Between 1948 and 1952, 43 cases diagnosed as traumatic reticulitis in cattle were treated by placing boards under the forelegs to raise the forequarters 8 inches higher than the hind quarters of the standing animal, fasting the animal for 3 days and injecting i/v 20 ml. of Novalgin before the appearance of fever. In advanced cases penicillin (600,000–1,200,000 units procaine penicillin in oil) was also given. Seven animals had to be slaughtered within 8 days, 2 were slaughtered in late pregnancy, 3–5 months after treatment, and 2 for other reasons. The remaining 32 cattle remained free from symptoms during the following 3 years. Although operative removal is the best method of treatment, these results show that conservative treatment may be useful when the value of cattle does not justify operation or when farmers are unwilling to agree to it.—E. G. WHITE.

MÜLLER, H. (1953). Verlagerung und Torsion des Labmagens bei einer Kuh. **[Displacement and torsion of the abomasum in a cow.]**—*Dtsch. tierärztl. Wschr.* **60,** 230-232. 2901

An account of diagnosis, surgical treatment and sequelae in a case of displacement and torsion of the abomasum in a cow, with comments on the cause of this condition.

—E. A. HIRSCH.

MACKEY, D. R. (1952). **Acute pulmonary emphysema.**—*Jensal J.* Oct. pp. 22-23. [Only abst. given. Abst. from abst.] 2902

Acute pulmonary emphysema followed the feeding of alfalfa and other green plants to cattle in Utah on their return to the valleys after summering on mountain ranges.—R.M.

KERNKAMP, H. C. H. (1951). **Edema disease of swine** [U.S.A.].—*Proc. 55th Ann. Meet. U.S. live Stk sanit. Ass.* pp. 205-210. 2903

A general review of the disease as seen in the U.S.A. K. included oedema of the lungs as one of the manifestations of oedema disease but did not discuss its differential diagnosis.

—J. T. DONE.

SCHOFIELD, F. W. (1953). **Should the name " oedema disease " be changed to " enterotoxaemia " of swine?** [Correspondence.]—*Vet. Rec.* **65,** 443. 2904

Reasons advanced for changing the name of the disease were that the symptoms and lesions pointed to a primary enterotoxaemia and that oedema was not always present. Introduction of the term " oedema disease " in N. America has confused the nomenclature of pig diseases.

—R.M.

HUPKA, E. (1952). Fütterungsversuche zur Auslösung des enzootischen Herztodes bei Schweinen. **[Experimental production of fatal syncope in pigs by certain diets.]**—*Dtsch. tierärztl. Wschr.* **59,** 145-148. 2905

Fatal syncope in pigs could be induced by feeding a diet mainly composed of potatoes with only a small proportion of crushed grain. Losses could be stopped by feeding a diet rich in protein, vitamins and minerals.—H. BEHRENS.

KRAMER, W. & BEIJERS, J. D. (1952). Cervicale prolaps van de tussenwervelschijf bij een hond (endochondrosis intervertebralis). **[Disc protrusion in a dog.]**—*Tijdschr. Diergeneesk.* **77,** 330-337. [English summary.] 2906

About six months after an accident a 6-year-old cross-bred boxer developed an unsteady stiff gait with kyphosis of the thoraco-lumbar vertebral column. The electro-encephalogram had a rhythm frequency of 20–25/sec. with an amplitude of 50 microvolt. The dog was destroyed and P.M. examination revealed a disc protrusion between the second and third cervical vertebrae.—C. A. VAN DORSSEN.

MAGEE, P. N. & SPECTOR, W. G. (1952). **Body water and electrolytes in acute anhydraemia.**—*Proc. R. Soc.* Ser. B. **139,** 584-597. [Authors' summary modified.] 2907

In an attempt to assess the importance of local fluid loss in burns, acute anhydraemia, associated with the progressive formation of local oedema, was produced in three ways, by the s/c inj. of hypertonic sugar solutions into rabbits and rats, thermal burning of rabbits and

i/p inj. of white of egg into rats. Measurements of the conc. of electrolytes in plasma were made, and a similar pattern of change from the normal values was found in the three types. The pattern consisted of a fall in conc. of sodium, chloride and bicarbonate, and a rise in conc. of potassium, magnesium and inorganic phosphate, with that of calcium showing no consistent variation.

It was concluded that this result supports the hypothesis that many of the effects of thermal burning are due to fluid loss into the site of injury and that in the conditions studied the changes are the result of severe local oedema formation in the absence of water intake. Direct injury to tissue cells, particularly after burning, is considered to be a possible additional factor.

Changes in the electrocardiograms of anhydraemic rabbits were similar to those known to occur in animals in which the plasma potassium conc. had been artificially raised. The elevation of plasma potassium conc., however, is not considered to be a sufficient cause of death. Quantitative analyses of the electrolytes of certain organs and tissues were made, and the pathogenesis of the alterations in conc. of the plasma electrolytes were discussed.

See also absts. **2854** (relation of antibodies, vitamins and hormones to immunity and infection); **2893** (pregnancy toxaemia); **2967** (book, diseases of sheep and goats).

POISONS AND POISONING

LOUW, P. G. J. (1952). **The urinary excretion of arsenic in the horse.**—*J. S. Afr. vet. med. Ass.* **23,** 107-109. [Abst. from author's summary.] **2908**

After oral administration of 257 mg. of arsenic trioxide to a horse, arsenic was detected in the urine in abnormal amounts very soon after dosage, and the urine became free from it only after 8 days. After oral administration of 77 mg. daily for 12 days, arsenic was eliminated fairly rapidly in the urine during the first five days after dosage had ceased, but could not be detected in the urine after 26 days.

SCHMIDT, H. J. & RAND, W. E. (1952). **A critical study of the literature on fluoride toxicology with respect to cattle damage.**—*Amer. J. vet. Res.* **13,** 38-49. **2909**

A general account of fluoride poisoning in cattle with a bibliography of 68 references.

—R. MARSHALL.

SEDLMEIER, H. & DAHME, E. (1952). Die Veränderungen der Serumeiweisskörper bei der experimentell erzeugten Bleivergiftung. **[Changes in the serum albumin in experimental lead poisoning.]** — *Berl. Münch. tierärztl. Wschr.* **65,** 181-184. **2910**

The authors produced subacute and chronic lead poisoning in rabbits by the i/v injection of lead acetate, 5·5 mg. per kg. body wt., in aqueous solution. There was a decrease of albumin and an increase of α- and β-globulins in the blood serum.—H. BEHRENS.

MCFARLANE, D. F. (1952). **Sulphur poisoning in cattle.**—*Vet. Rec.* **64,** 345-347. **2911**

To a group of 24 Shorthorn heifers and bullocks the owner gave each 3 oz. of flowers of sulphur with warm wet brewer's grains. The animals became dull and some had diarrhoea; 5 died and the rest recovered. Sulphur found in the alimentary tract P.M. was estimated quantitatively.—R. MARSHALL.

SIKES, D., WISE, J. C. & BRIDGES, M. E. (1952). **The experimental production of " X disease " (hyperkeratosis) in cattle with chlorinated naphthalenes and petroleum products.**—*J. Amer. vet. med. Ass.* **121,** 337-344. **2912**

Hexachloronaphthalene was administered by mouth to a bullock at a daily dosage of 1 g. for 30 days and 2 g. for a further 30 days. Octachloronaphthalene was similarly given to a cow (5 g. daily for 18 days) which was suckling a calf, and to a young bull. A chassis lubricant was administered by mouth to a heifer (5 g. increasing to 20 g. daily over 28 days) and to a calf (5 g. for 16 days). Tractor crankcase oil was applied to the back of a cow once weekly for 8 weeks; 20 ml. of the same substance were given by mouth daily for 30 days to a heifer. In all these animals, including the unweaned calf, symptoms developed which were identical with those observed in cases of hyperkeratosis. The P.M. findings in each animal were described.—R.M.

PETERS, R. A. (1952). **The puzzle for therapy in fluoroacetate poisoning.**—*Brit. med. J.* Nov. 29th, 1165-1170. **2913**

Fluoroacetate has been shown to interrupt the aconitase stage of the tricarboxylic acid cycle by entry into the mitochondrial constituent of the cell and by formation of toxic fluorocitrate. Some prevention of the effect by monoacetin and by pyruvate and acetate has been shown to occur. P. stated that these findings may be of use in the treatment of cattle poisoned by ingestion of the African plant *Dichapetalum*

cymosum. He suggested that another poisonous plant, *D. toxicarium* in Sierra Leone may also contain a fluoro-compound as it was lethal to rats and produced similar symptoms.
—R. MARSHALL.

BURDIN, M. L. & PLOWRIGHT, W. (1952). **Delayed toxicity of certain trypanocidal drugs in East African zebu cattle.** [Correspondence.] —*Nature, Lond.* **169**, 666-667. 2914

The authors found that dimidium bromide is toxic for East African zebu cattle at a dosage of 2–3 mg./kg. Toxic effects developed 35–50 days later: loss of weight and condition, a positive van den Bergh reaction, jaundice, and a rise in the serum alkaline phosphatase level. Microscopically, there was specific periportal infiltration of the liver. At a dosage of 1 mg./kg., the usual therapeutic dosage, poisoning occurred only occasionally.

Two other related phenanthridine compounds, 2 : 7-diamino-9-*p*-aminophenyl-10-methylphenanthridinium chloride and 2 : 7-diamino-9-α-thienyl-10-methylphenanthridinium bromide, produced the same effects; four others, 7-amino-9-*p*-amino-phenyl-10-methylphenanthridinium chloride at a dosage up to 8 mg./kg.; and 2:7-diamino-9-phenyl-10-ethylphenanthridinium bromide, 2:7-diamino-9-phenyl-10-allylphenanthridinium bromide and 2:7-diamino-9-phenyl-10-propylphenanthridinium bromide up to 3 mg./kg. were non-toxic.

With antrycide methyl sulphate at a dosage of 7·5–10 mg./kg. poisoning became manifest after 2–3 weeks, the main lesion being in the kidneys.—J.D.

See also abst. **2968** (book, poisons).

PHARMACOLOGY AND GENERAL THERAPEUTICS

(For treatment of specific infections see under the appropriate disease)

MASON, M. M. (1952). **Dramamine and the vestibular apparatus in the dog.**—*Amer. J. vet. Res.* **13**, 549-554. 2915

"Dramamine" (dimenhydrinate) was well tolerated by dogs when given orally in single doses of up to 15 mg. per lb. body wt., and when injected i/v at 4–5 mg. per lb. body wt. Higher doses caused salivation and vomiting. Attempts were made to reproduce motion sickness in dogs by rotating them, but these failed. Since clinical trials were not held, it was therefore impossible to assess the use of this drug in motion sickness in dogs.—R.M.

I. CLARK, R. & WEISS, K. E. (1952). **The possible applications of the new hypotensive (methonium) drugs in veterinary practice.**—*J. S. Afr. vet. med. Ass.* **23**, 15-20. 2916

II. CLARK, R. & WEISS, K. E. (1952). **The efficacy of methylamphetamine as an analeptic in pentobarbital sodium overdosage.**—*Ibid.* 79-83. 2917

I. The author advocated the use of methonium drugs in surgical operations on animals. Experiments with dogs, goats, and a horse showed the effectiveness of the drugs in lowering the blood pressure of these animals under anaesthesia. While a horse was under the influence of the drug a deep incision was made into a shoulder muscle: the flesh appeared quite dry, exuding hardly any blood, while a small artery which had been cut ceased to flow after a single gush.

II. Methylamphetamine proved to be a powerful analeptic for dogs which were given an overdose of nembutal: it restored blood pressure and respiration rate almost instantaneously without causing convulsion or in any way disturbing anaesthesia.

Cats frequently resist treatment and it is difficult to avoid overdosing them. The authors investigated the possibility of reducing the danger to cats by using a mixture of 24 ml. nembutal with 1 mg. methylamphetamine. Two out of 6 cats died when injected i/v with the anaesthetic alone at a dosage of 1 ml. per 5 lb. body wt. Six animals injected with the mixture of anaesthetic and analeptic recovered uneventfully.—A.S.

WOOLSEY, J. H., JR. & SCHAFFER, M. H. (1952). **Treatment of granulating wounds in horses by means of skin grafting.**—*J. Amer. vet. med. Ass.* **121**, 173-176. 2918

The authors described and illustrated a technique for the treatment of skin grafting of wounds of the lower extremities of horses showing excessive granulations, which gave successful results in 5 of 7 cases. As a preparatory measure, the exuberant granulations were first trimmed off, so that a new granulating surface, suitable for the growth of skin grafts, appeared in 10–14 days. A square of skin was removed from just lateral to the anus of the affected animal under local anaesthesia, and small frag-

ments of this were implanted in the new granulation tissue with the aid of forceps. Pressure packs were then applied. The grafts usually "took" in 2–4 weeks.—E. COTCHIN.

See also abstr. **2753** & **2755** (effect of antibiotics on tubercle bacilli); **2801-2802** (trypanosomiasis); **2807** (blackhead); **2810** (destruction of *E. tenella* oocysts); **2841-2842** (antibiotics and viruses); **2849** (disinfectant); **2858** (B.H.C. and D.D.T.); **2862** (repellent); **2864** (anthelmintic); **2889** (atabrine); **2914** (toxicity of certain trypanocidal drugs; **2968** (book, poisons); **2969** (British pharmacopoeia 1953).

PHYSIOLOGY, ANATOMY AND BIOCHEMISTRY

BERGEL, F. (1953). **Some chemical aspects of normal growth.**—*Nature, Lond.* **171,** 905-908. **2919**

B. pointed out the lack of knowledge of chemical aspects of cell division, fertilization, induction, and cyto- and histo-differentiation. He discussed the part played by proteins and nucleotides in the formation of cytoplasm, and the mode of action of growth regulators.

—W. H. PARR.

WALSER, M., SELDIN, D. W. & GROLLMAN, A. (1953). **An evaluation of radiosulfate for the determination of the volume of extracellular fluid in man and dogs.**—*J. clin. Invest.* **32,** 299-311. [Authors' summary modified.] **2920**

Radiosulphate was shown to be a satisfactory and convenient measure of the functional extracellular fluid volume in normal man and dogs, on the basis of the following observations:—

Diffusion equilibrium after a single injection is achieved in 15 to 20 min. in man and 20 to 30 min. in dogs. Only 4 to 8% of the dose is excreted during equilibration; urine collection may therefore be omitted without serious error. Cellular penetration during equilibration is slight in both species, but greater in dogs than in man. Half of the dose is excreted within four to nine hours, and therefore frequent determinations can be made. Repeated determinations in a single individual differ by an average of 0·16 to 0·30 litre. The radiosulphate space to simultaneously determined inulin space in nine human subjects was $0{\cdot}95 \pm 0{\cdot}11$. The radiosulphate space in 28 normal men and women was 11% to 21% of body weight, averaging 15·1% in this series. In 16 normal dogs it was $20{\cdot}1 \pm 2{\cdot}1\%$ of body weight.

Evidence in support of the accepted view that all of the plasma sulphate is filterable through the glomerulus was also presented.

D'AGOSTINO, A., LEADBETTER, W. F. & SCHWARTZ, W. B. (1953.) **Alterations in the ionic composition of isotonic saline solution instilled into the colon.**—*J. clin. Invest.* **32,** 444-448. [Authors' summary copied *verbatim.*] **2921**

Following instillation of isotonic sodium chloride solution into the isolated colon of the dog, gradients are established across the colonic mucosa characterized by a higher concentration of bicarbonate and lower concentration of chloride in the colon than in the plasma. The sum of the concentrations of these anions in the colonic fluid remains essentially unchanged. The development of this equilibrium probably plays a part in the genesis of hyperchloremic acidosis after uretero-enterostomy. In most instances, concentration gradients across the colonic wall are also established for sodium and potassium.

MARSHALL, A. H. E. (1953). **The reticular tissue and the "reticulo-endothelial system".**—*J. Path. Bact.* **65,** 29-48. [Author's summary modified.] **2922**

M. studied the cytology and reactions of the reticular tissue and reticulo-endothelial system in the normal state and in a number of pathological processes, and concluded that a widespread system of metalophil cells of characteristic morphology and staining reaction with certain metallic salts is present throughout the tissues of the body; the reticulo-endothelial system of Aschoff forms a part of the system of metalophil cells but is not a distinct cytological entity; there is no evidence that the metalophil cells are involved in the formation of any other cellular elements, with the possible exception of fibroblasts; the so-called reticulum cells of the spleen, lymph nodes and other areas of the reticular tissue may be divided into two types, (a) metalophil cells proper, and (b) undifferentiated elements—the primitive reticular cells; reticular tissue is defined as being composed of fixed cells (primitive reticular cells) supported on a framework of fibrils and including all cells in the body derived from this tissue.

VAN WASSENHOVE, A. (1949). Bloedonderzoek bij het Belgisch Trekpaard. **[Blood examination in Belgian draught horses.]**—*Vlaam. Diergeneesk. Tijdschr.* **18,** 1-18. [English, French and German summaries.] **2923**

A detailed account of examination of the blood of Belgian draught horses in health and in a total of 63 diseases, figures for the latter being included in a table. The normal values found were:—Hb 70–80%; r.b.c. 5–7·5 million/cu. mm.; w.b.c. 7–10,000/cu. mm.; blood picture: unsegmented neutrophiles 5%, segmented cells 60%, lymphocytes 30%, monocytes 3%, eosinophiles 2%, basophiles 0·25%. The examination also covered sedimentation rate, fragility of r.b.c., coagulation time, prothrombin time, density of blood and serum and colloid reaction of serum.—J.D.

Neumann-Kleinpaul, K. (1952). Blutkörperchensenkung bei jungen Traberpferden. **[Erythrocyte sedimentation rate in young trotting horses.]**—*Berl. Münch. tierärztl. Wschr.* **65**, 175-178. 2924

While under training, trotting horses have a slow erythrocyte sedimentation rate, which disappears soon after training ceases.

—H. Behrens.

Germann, F. (1952). Untersuchungen über den Einfluss der Temperatur auf die Senkungsgeschwindigkeit des Pferdeblutes. **[Effect of ambient temperature on the erythrocyte sedimentation rate of horse blood.]**—*Schweiz. Arch. Tierheilk.* **94**, 228-242. [English, French and Italian summaries.] 2925

With exceptions, the sedimentation rate increased with decreasing ambient temperature. Constant values were obtained for up to 4 hours after collection in blood stored at 4°–18°C. Samples could not be refrigerated at 4°C. for longer than an hour without adverse effect on the sedimentation rate.—R.M.

Spörri, H. (1952). Über die Genese und klinische Bedeutung des partiellen Herzblockes beim Pferd. **[Partial atrioventricular block in horses.]**—*Schweiz. Arch. Tierheilk.* **94**, 337-346. [English, French and Italian summaries.] 2926

Electrocardiographic examination of 205 healthy horses revealed that 18% showed a partial a-v block. It was regarded as a physiological phenomenon.—R.M.

Gardiner, M. R., Sippel, W. L. & McCormick, W. C. (1953). **The blood picture in newborn pigs.**—*Amer. J. vet. Res.* **14**, 68-71. 2927

Estimations of haemoglobin, haematocrit, serum calcium and potassium were made on 26 piglets (from 4 sows) during the first fortnight of life. A parallel decline in haemoglobin and haematocrit in the first week was followed by a rise in the second week; the fall was twice as great in litters reared on concrete as in those reared on soil and pasture, but serum calcium and potassium figures were unrelated to environment. The total white cell count showed very wide variations.—G. Fulton Roberts.

Christensen, G. C. (1952). **Circulation of blood through the canine kidney.**—*Amer. J. vet. Res.* **13**, 236-245. [Author's summary slightly modified.] 2928

Blood to the canine kidney enters the renal artery from the aorta, goes through end arteries, interlobar vessels, arcuate vessels, interlobular arteries, and finally to glomeruli *via* afferent arterioles. Efferent arterioles (arteriolae rectae spuriae) leave the glomeruli and course directly into the outer layer of the medulla, giving rise to long capillary nets which extend to the apical end of the pyramid; or efferent arterioles branch into intertubular capillary networks directly.

The kidney is drained by the stellate veins of the capsule, which are very numerous in the dog. These empty into the interlobular, arcuate, and interlobar veins, and finally into the main trunk of the renal vein, which discharges into the caudal vena cava.

A few isolated arteriolae rectae verae were found, going from the arcuate arteries directly into the medullary region. Ludwig's arterioles supplying peritubular plexuses directly from afferent glomerular arterioles were observed in some specimens. Arteriovenous anastomoses were nonexistent. Afferent and efferent glomerular arterioles anastomosed in a few instances.

A rare arterial connecting artery was found in the latex cast of a hypertrophied kidney, running from an interlobar artery to a joining arcuate artery, giving off branches to four other interlobar arteries.

In renal hypertrophy, individual vascular elements were enlarged. Compensatory constrictions occurred along the paths of many enlarged vessels.

Attempts to verify the "Trueta Phenomenon", *i.e.*, the normal existence of two independent circulatory pathways in the kidney, were unsuccessful. Observations indicated that separate outer cortical and juxtamedullary circulations did not exist.

Measurements over a series of vascular renal elements conflicted with Trueta's theorem that juxtamedullary vasa efferentia are much larger than efferent vessels from outer cortical glomeruli.

Reynolds, S. R. M., Light, F. W., Jr., Ardran, G. M. & Prichard, M. M. L.

(1952). **The qualitative nature of pulsatile flow in umbilical blood vessels, with observations on flow in the aorta.**—*Johns Hopk. Hosp. Bull.* **91,** 83-104. **2929**

Observations, reported in 22 foetal lambs and in two cats of blood-pressures and streamlining in the umbilical cords, show that there is no detectable alteration in the calibre of large arteries with the pulse pressure. ' Pulsation ' is caused by a bodily shift of the entire artery and is greatest at points of curvature.

—W. R. Bett.

Waring, H. & Ketterer, B. (1953). **Relation of adrenocorticotrophin (ACTH) to the melanophore expanding (B) hormone of the pituitary.**—*Nature, Lond.* **171,** 862-864. **2930**

Because of recent claims that A.C.T.H. and B hormone are identical, the authors reviewed the available evidence. Apart from its academic interest, the problem is of practical importance since the assay of melanophore-expanding properties is simple and reliable, while present methods of A.C.T.H. assay are not. The authors concluded that, while the activities of B hormone and A.C.T.H. (assayed by its ascorbic acid depleting activity) appear chemically similar, they are separable in certain circumstances. This does not affect the possibility that B hormone plays a part in the pituitary adrenocorticotrophic system.—W. H. Parr.

Wijnans, M. (1953). **The role of the nervous system in the development of compensatory testicular growth after hemicastration.**—*Acta endocr., Copenhagen.* **13,** 69-73. [In English.] **2931**

In agreement with experiments reported on female animals W. found that compensatory testicular growth after hemicastration was at least partly dependent on a reflex increase of pituitary follicle-stimulating hormone. When conduction of sensory stimuli was made impossible only a small residual growth occurred.

Davies, B. M. A. & Gordon, A. H. (1953). **Hormonal nature of extracts of parathyroid gland stimulating phosphate excretion.** [Correspondence.]—*Nature, Lond.* **171,** 1122-1123. **2932**

Ox parathyroid extracts contain a hormone which raises serum calcium levels, and another factor—also hormonal—which stimulates phosphate excretion.—N. Dean.

See also absts. **2854** (relation of hormones to immunity); **2855** (blood groups and blood factors); **2892** (blood levels and constituents in normal pregnant cows and cows with parturient paresis); **2939** (leucocytes during the oestrous cycle in the cow); **2970** (symposium, adrenal cortex); **2971** (book, anatomy and physiology of slaughter animals).

PUBLIC HEALTH, VETERINARY SERVICES AND VETERINARY EDUCATION

Christiansen, O., Koch, S. O. & Madelung, P. (1951). Et udbrud af levnedsmiddelforgiftning forårsaget af Bacillus cereus. [**An outbreak of food poisoning caused by** *Bacillus cereus.*]—*Nord. VetMed.* **3,** 194-202. [In Danish. English and German summaries.] **2933**

The authors reported an outbreak of food poisoning caused by *B. cereus,* previously described by Hauge [*V.B.* **22,** 1172]. It was isolated from "yellow pudding" which had been prepared the previous day from a commercial cornflour powder, with milk, and cooled at room temperature.—F.E.W.

Lekarev, V. M. (1953). [**Thirty-five years of the Soviet Army Veterinary Services.**]—*Veterinariya, Moscow.* **30,** No. 2. pp. 3-9. [In Russian.] **2934**

These Services came into being with the decree establishing the Red Army on Feb. 23rd 1918, at a period when conditions were chaotic and epidemics rife, particularly rinderpest and glanders, owing to the civil war following on top of the first world war. To increase the efficiency of veterinary work, civil veterinary establishments were put under military control in 1920; all veterinary students were released from other duties in order to complete their studies; any buildings required for veterinary work were requisitioned. Glanders was gradually reduced while rinderpest and certain other diseases began to come under control by about 1924.

During 1924-25 the Army Veterinary Services were reorganized and military veterinary institutes and laboratories were established. Research work and the manufacture of adequate supplies of medical preparations were made first priority. During the second world war the incidence of disease among army horses was kept well down and the rehabilitation of wounded horses reached a high level of success.

—F.A.A.

Gerriets, E. (1953). Die Forschungsabteilung für Geflügelkrankheiten der Humboldt-Universität zu Berlin in Damsdorf, Kr.

Zauch-Belzig. [**The Humboldt University Research Institute for Diseases of Poultry at Damsdorf.**]—*Mh. VetMed.* **8,** 51-53. 2935

A description of the Humboldt University research station for diseases of poultry, with 22 illustrations. The buildings comprise laboratories, living accommodation for staff and many poultry houses for fowls, ducks and geese, occupying an area of some 24 acres. There is provision for up to 2,000 poultry.

—E.V.L.

Blood, B. D. (1952). La profesión medica veterinaria en las Americas: su proporción y distribución. [**The veterinary medical profession in North and South America. (Includes table showing number of each domesticated animal in each territory in North and South America.)**]—*Bol. Ofic. sanit. pan-amer.* **33,** 391-393. 2936

A brief note on certain matters relating to veterinary services in North and South America. A table is given of human population, area and numbers of domesticated animals.

See also absts. **2746** (anthrax in an abattoir); **2972** (book, food inspection).

LIVESTOCK HYGIENE

Anon. (1953). **Grazing and forest economy.** pp. 161. Rome: Food and Agriculture Organization of the United Nations. FAO Forestry and Forest Products Studies No. 4. 2937

A booklet prepared for the assistance of administrators concerned with striking a proper balance between the conflicting claims of agriculture, grazing, and forestry. It is well illustrated with photographs from various parts of the world clearly showing the dangers of overgrazing, which leads to the progressive deterioration of the vegetative canopy and, frequently, to the denudation and erosion of entire watersheds.

In every country there should be a clear policy maintaining a careful equilibrium between forest and grazing land. Many factors must be considered in the elaboration of such a policy, but foremost among them are always the possible dangers of erosion and flooding, the capital outlay required by any particular plan, and the integration of the policy with the national economy as a whole.—A.S.

See also abst. **2896** (portable pens for control of diseases in calves).

REPRODUCTION AND REPRODUCTIVE DISORDERS

Mies Filho, A., Ast, O. & Vale, G. (1951). Ensaio de avaliação do sêmen de bovino com uso da célula foto-elétrica. [**Evaluation of bull semen by a photo-electric method.**]—*Proc. Vth Congr. bras. Vet.* São Paulo, 1950. 517-530. 2938

A simple photo-electric method for assessing the density of bull semen was described. The results have been checked by counts on Neubauer rulings, and give a margin of error of ±16% in the case of marble-white semen, but in the case of yellowish semen the error is too great to render the method useful.

—I. W. Jennings.

Moberg, R. (1952). **Leucocytes during the oestrual cycle in cow.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952, **1,** 129-134. [In English. French and German summaries.] 2939

There is a rise in the white cell count in cattle during oestrus and a fall in the eosinophile count.

In a study on 7 cows over 21 oestrous cycles M. found that the total leucocyte count during follicular phase averaged 6,170 per cu. mm., and 5,790 during the luteal phase.

—J. M. Swanney.

Burger, J. F. (1952). **Sex physiology of pigs.** —*Onderstepoort J. vet. Res.* Suppl. No. 2. pp. 218. 2940

A well-documented account of extensive work with Large White and Large Black pigs on some of the physiological factors concerned with reproductive efficiency in swine. The bulk of the observations related to the female and were especially concerned with the morphology of the ovaries, the oestrous cycle and the optimum mating time.—J. T. Done.

I. Hays, R. L. & Vandemark, N. L. (1953). **Spontaneous motility of the bovine uterus.**—*Amer. J. Physiol.* **172,** 553-556. 2941

II. Hays, R. L. & Vandemark, N. L. (1953). **Effects of oxytocin and epinephrine on uterine**

motility in the bovine.—*Ibid.* 557-560. [Absts. from authors' summaries.] 2942

I. Using a balloon technique the authors recorded spontaneous movements of the uterus in 9 cows at various stages of the oestrous cycle.

In general during oestrus the contractions were regular, frequent, and of small amplitude while in mid-cycle they were of greater amplitude but less frequent and accompanied by irregular changes in tone.

In certain animals the pattern of activity remained unvaried throughout the cycle. Some cows showed significantly greater activity than others.

Ovariectomy reduced activity by one half but it could be restored to normal by oestrogen with or without progesterone. Progesterone alone returned the index to normal by increasing the amplitude without affecting the frequency.

II. The effect of oxytocin, epinephrine and epinephrine followed by oxytocin on motility of the uterus of cows was determined by the balloon technique both *in vivo* and *in vitro*. Oxytocin caused increased activity at all stages of the oestrous cycle. Epinephrine caused a period of reduced activity and tone usually preceded by one large contraction. Epinephrine given before oxytocin partially or completely inhibited the increased activity due to oxytocin. The results *in vitro* verified the results *in vivo*.

—A.S.

McDonald, L. E., Black, W. G., McNutt, S. H. & Casida, L. E. (1952). **The response of the rabbit uterus to instillation of semen at different phases of the estrous cycle.**—*Amer. J. vet. Res.* **13,** 419-424. [Authors' summary modified.] 2943

Fourteen rabbits were studied and observations made of the gross and microscopic changes that followed injection of bacterially contaminated semen or of sterile epididymal sperm into the uterus of oestrous rabbits and of ten-day pseudo pregnant rabbits.

The injection of sterile epididymal spermatozoa into the uterus of oestrous or pseudopregnant rabbits failed to induce a significant reaction.

Bacterially contaminated semen induced a marked pyometra in the uterus of pseudopregnant rabbits but only a mild inflammatory reaction in the uterus of oestrous rabbits.

Communal, M. (1952). Étude du diagnostic de gestation chez la vache. **[Pregnancy diagnosis in the cow.]**—*Maroc. méd.* **31,** 616-625. 2944

The authors considered the following to be the best of the various methods that have been described: (1) the chemical method of detection of folliculin and pregnanediol in the urine and (2) demonstration of the presence of characteristic cells in urine sediment.—R.M.

Ploman, L. (1952). **Skin permeability and pregnancy. A study of dermal spread and absorption in rabbits and mice.**—*Acta endocr., Copenhagen.* **10,** 333-356. [In English.] 2945

In rabbits, 4 weeks pregnant, injected i/d with 0·1 or 0·3 ml. of an isotonic soln. of bovine haemoglobin either with or without the addition of hyaluronidase there was inhibition of dermal spread as compared with non-pregnant controls.

In similar rabbits injected i/d with 0·1 ml. of an isotonic NaCl soln. containing fluoerscein sodium, acceleration of dermal absorption was observed as compared with non-pregnant controls.

Inhibition of dermal spread was also seen in dead rabbits, but not in dead mice.

—W. R. Bett.

Felton, L. C., Frieden, E. H. & Bryant, H. H. (1953). **The effects of ovarian extracts upon activity of the guinea pig uterus *in situ*.**—*J. Pharmacol.* **107,** 160-164. [Authors' summary modified.] 2946

Studies of the chemical properties of a uterine relaxing factor (URF), obtained from aqueous extracts of sows' ovaries showed the active agent to be non-dialyzable, stable to heat, and sensitive to the action of proteolytic enzymes and a variety of reducing agents. The authors concluded that URF is a protein or polypeptide. URF activity was also displayed both by crude and purified relaxin preparations, and comparison of the occurrence of URF and relaxin in various tissues suggested a close relationship between the two substances.

The authors discussed the possible relationship between protein-like hormones of the reproductive tract and changes in uterine motility.

Tuchmann-Duplessis, H. & Levasseur, C. (1953). L'action des oestrogènes naturels et de synthèse sur le cortex surrénal du rat. **[The action of oestrogens on the adrenal cortex of the rat.]**—*Bull. Micr. appl.* **3,** 9-11. [English summary modified.] 2947

Oestrogens induce in normal and castrated rats a marked increase in the weight of the adrenal glands. The hyperplasia of the cortex is associated with a marked depletion of sudanophilic material. This effect is mediated through the pituitary gland. From the experiments it

cannot be concluded that there is a functional relationship between the gonads and the adrenal glands.

VEIGA, J. S. & RIBEIRO, O. F. (1951). Estrogénios em plantas forrajeiras e seu possível efeito sôbre a fertilidade dos rebanhos nacionais nos períodos das águas e da sêca. (Nota prévia.) **[Oestrogens in fodder grasses and their effect on fertility of rats.]**—*Proc. Vth Congr. bras. Vet.* São Paulo, 1950. 455-457. [English summary.] **2948**

The authors prepared an extract of *Panicum maximum* which, injected into castrated female rats for 3 consecutive days, induced oestrus on the fifth day. An extract of another fodder grass, *Penisetum longistylum,* administered in the same way, did not promote oestrus.

The extract of *P. maximum* had an activity equivalent to 16,666 I.U. of oestrogen per litre.—A.S.

MERCIER-PAROT, L. (1952). Influence des oestrogènes et de la castration sur la thyroïde du rat. **[Influence of oestrogens and of castration on the thyroid gland of the rat.]**—*Bull. Micr. appl.* **2,** 117-124. [English summary.] **2949**

The author used male rats in his studies of the effects of castration and oestrogen treatment upon the thyroid gland, the depth of the epithelial cells being taken as a measure of the activity of the gland. Castration produced no change perceptible by this means, but treatment with oestrogen was variously stimulating according to the doses employed. The effect was considered to be pharmacological and not of a kind to be met with in normal physiology.—A.S.

DE MACEDO, J. J. (1951). Aureomicina: ação sôbre o crescimento. Desenvolvimento dos caracteres sexuais em pintos. **[The action of aureomycin on the sex characteristics of cockerels.]**—*Proc. Vth Congr. bras. Vet.* São Paulo, 1950. 427-436. [English conclusions.] **2950**

The authors compared the effects of aureomycin administered *per os* and i/m to young cockerels taken at their 17th day and treated for a period of 43 days.

Birds which received the antibiotic *per os* grew more quickly and developed larger combs, wattles, and testes. Active spermatogenesis commenced in these birds during the course of the experiment. Those treated i/m were less thrifty and less precocious in the development of combs, wattles, and testes. Spermatogenesis did not occur in them during the course of the experiment.—A.S.

PACHECO JORDÃO, L. & GOUVEIA, P. F. (1951). Eficiência reproductiva do puro sangue inglês, em São Paulo. **[Fertility level of Thoroughbred mares in Brazil.]**—*Proc. Vth Congr. bras. Vet.* São Paulo, 1950. 459-499. [English abstract and conclusions.] **2951**

A detailed analysis of statistics concerning the breeding efficiency of English Thoroughbred horses under Brazilian conditions.—A.S.

YOUNG, G. B. (1953). **Genetic aspects of fertility and infertility in cattle.**—*Vet. Rec.* **65,** 271-276. Discussion pp. 276-278. [Author's summary modified.] **2952**

A survey of the genetics of fertility and infertility in dairy cows.

Variation in the fertility of daughters attributable to inheritance from their sires seemed slight compared with the total variation in fertility. Less than 20% of the differences in fertility between cows appeared to be permanent, and only about half of these seemed to be inherited. Hence the rate of increase in fertility due to selection would be slow. In the present state of knowledge, positive selection for fertility is probably not worth while in dairy cattle.

Various genetic defects of the genital organs including hypoplasia in the Swedish Highland breed were examined. There was evidence that infertility in heifers may be caused by genes for sterility. Nymphomania, various defects in the spermatozoa, and other genetic causes of sterility were considered and it was concluded that the spread of these conditions depends on the extent to which they are associated with good or supposedly good production qualities. Inbreeding frequently results in a decline of fertility. Dizygotic twinning could be selected for moderately easily, but it would not be desirable. There is little evidence that genetic factors are greatly involved in early embryonic mortality, or that high production induces fertility. Infertility would need to be very severe to cause a shortage of replacements in dairy cattle herds.—A.S.

CEDERBERG, I. (1952). Ärftlig hyperplastisk gingivit. En histologisk undersökning av silverräv. **[Hereditary hyperplastic gingivitis in silver foxes.]**—*Svensk Tandläkare-Tidskrift.* No. 1. pp. 1-11. [English summary.] Reprinted in *Medd. Veterinärhögsk. Stockh.* No. 26. (1951-52). [Abst. from English summary.] **2953**

An account of proved hereditary hyperplasic gingivitis in the silver fox. The disease begins at the time of eruption of the permanent teeth. Swelling practically occludes the

crown, frequently causing the displacement of one or more teeth from their normal positions.

Histological examination reveals extensive changes in the epithelium, including the development of wedge-like proliferations penetrating into the collagenous connective tissue. The central regions of the wedges often decompose giving rise to lobulations at the outer surface.

—A.S.

HJÄRRE, A. (1953). Vegetierende Dermatosen mit Riesenzellenpneumonien bei Schweinen. **[Dermatoses in piglets with giant-cell pneumonia.]**—*Dtsch. tierärztl. Wschr.* **60,** 105-110. **2954**

The congenital dermatosis described mostly affects a few pigs of a well grown litter at the distal parts of the limbs together with a disturbance in the growth of the hooves and resembles pemphigus vegetans. Later the disease spreads over large areas of the body, especially over the insides of the limbs and the abdomen with local and diffuse, sometimes papillomatous overgrowth of the skin. The disease causes poor growth and death at about 6–7 weeks. Giant-cell pneumonia occurs as a complication. H. had examined 23 cases. He discussed the aetiology and suggested that hereditary disposition, intra-uterine infection and a vitamin A-deficency might be the main factors. Nineteen photographs and photomicrographs were repreduced.—H. BEHRENS.

HABERMEHL, K. H. (1953). Pygomelie und andere Missbildungen bei Huhn und Hahn. **[Pygomelia (supernumerary limbs) and other malformations in fowls.]** — *Berl. Münch. tierärztl. Wschr.* **66,** 181-185. [English summary.] **2955**

A clinical report on two fowls exhibiting doubling of the cloaca and the formation of three caeca. Both had in addition a third hind-limb.—A.S.

SKALLER, F. & GRIGG, G. W. (1951). **The inheritance of shank colour in single-comb White Leghorns and Australorp fowls.**—*Aust. J. agric. Res.* **2,** 494-499. [Abst. from authors' summary.] **2956**

The authors reported observations on the incidence of shank colour in different types of crosses between yellow-shanked White Leghorns and black-shanked Australorps.

According to observations made by other workers on White Leghorn and other breeds, a hypothesis was advanced regarding the genes involved in determining shank colour in the White Leghorn and Australorp. A genetical analysis of the observations made by the authors on 847 single crosses, 71 backcrosses, and 31 zig-zag crosses showed close statistical agreement with this hypothesis. The authors suggested a genitical formula, including four autosomal and two sex-linked genes, which would explain the mode of inheritance of shank colour in White Leghorns and Australorps.

See also absts. **2759** (sterility in cattle caused by *C. pyogenes*); **2871** (lipomatosis in a bull); **2892** (haematocrit values in normal pregnant cows and cows with parturient paresis).

ZOOTECHNY

CROFT, P. G. (1953). **Electric stunning and electrocution of small animals.**—*Vet. Rec.* **65,** 259-261. [Author's summary modified.] **2957**

A description of a practical method of electrocution for dogs and other small animals: in dogs stunning was instantaneous and death followed shortly afterwards while the animals were still unconscious. The method employed mains voltage and the current was passed through the brain and heart by means of crocodile clips fastened to the ear and opposite flank.

The current passing through the dog during electrocution was measured, and the effect of a number of variables studied. The state of consciousness of an animal during the process of electrocution was discused.—A.S.

LALANNE, A., MORNET, P., CHALUMEAU, P. & VALIN, R. (1952). Considérations sur le poids et l'âge des zébus de boucherie du Soudan et de la Haute-Volta. (A.O.F.). **[Weight and age of Sudan slaughter cattle.]**—*Rev. Élev.* **5,** 9-16. **2958**

During trials for drug-prevention of trypanosomiasis, the authors took the opportunity to weigh the cattle—220 in number—from three herds, one of 100 bullocks, specially selected, and two comprising 120 cattle just as they were collected. Their weights compared with their ages were set out in a series of tables and graphs. Four photographs were reproduced.

—D. S. RABAGLIATI.

BRATLIE, O. (1951). Laerebok i maskinmjølking. **[Handbook on machine milking.]** pp. iv + 88. Oslo: Norske Melkeprodusenters Landsforbund. Kr.6.-. **2959**

Milk production has become very dependent upon milking machines and will become increas-

ingly so. Even on small farms outside help is becoming more and more difficult to obtain where milking has to be done by hand and labour is steadily becoming more costly. Machinery is therefore being installed in an ever-increasing tempo and the machines bring new problems in their train, so that dairy organizations are faced with the task of seeing that the best possible use is made of such machinery and that the damage caused by unskilled use is reduced to a minimum. The Norwegian National Milk Producers' Alliance has therefore provided for educational courses in machine milking and this textbook is written for the use of those giving such courses.

In addition to the use and maintenance of milking machines, their cleansing and sterilization and the possible mechanical faults that may arise, the author deals with the structure and functioning of the udder and with the technique of hand milking. There is a chapter on procedure to be followed at machine milking demonstrations. The book is amply illustrated with diagrams and photographs and there is an alphabetical index. Both printing and paper are of high quality.—F.E.W.

See also abst. **2896** (portable pens for control of diseases in calves).

TECHNIQUE AND APPARATUS

Holz, J. (1951). Versuche der Züchtung von Spirillen und einiger pathogener Protozoen in isolierten Backentaschen von Geldhamstern (Mesocricetus auratus). **[Cultivation of *Spirilla* and some protozoa in isolated cheek pouches of golden hamsters.]**—*Z. Hyg. InfektKr.* **133**, 557-560. **2960**

H. described a technique for isolating the cheek pouches of hamsters. He hoped to grow cultures of spirilla, leptospira and some protozoa under anaerobic conditions in the closed sac so formed, but failed.—M. L. Clarke.

Routien, J. B. & Finlay, A. C. (1952). **Problems in the search for microorganisms producing antibiotics.**—*Bact. Rev.* **16**, 51-67. **2961**

A review of methods used in the isolation and testing of antibiotic-producing strains of, mainly, the actinomycetes.—A. H. Linton.

Waksman, S. A. & Lechevalier, H. A. (1951). **The principle of screening antibiotic-producing organisms—with a note concerning a modified procedure intended to yield certain special antibiotics.**—*Antibiot. & Chemother.* **1**, 125-132. [Abst. in *Bull. Hyg., Lond.* **27**, 78. (1952), slightly modified.] **2962**

This paper gives a brief account of methods used for detecting antibiotic formation by newly isolated strains of moulds, etc., and mentions a feature of the results obtained by the cross-streak method whereby it can be decided to which of two important groups an unknown antibiotic belongs. One of these includes streptomycin, streptothricin and neomycin, and the inhibition zones produced by organisms forming antibiotics of this type remain constant in width during prolonged incubation. The second embraces aureomyicn, chloramphenicol and terramycin: inhibition zones produced by organisms forming these diminish in width between the 1st and the 3rd days owing to the instability of the antibiotic concerned. An organism recently isolated from Texas soil was identified in this way as belonging to the second category.

Sánchez-Garnica, C. (1952). Problemas de clinica vacona. II.—Obtensión de una prueba de la secreción cervical en la vaca para la exploración bacteriana. **[Collection of cervical mucus from cows.]**—*An. Fac. Vet. Madrid.* **4**, 278-283. [English, French and German summaries.] **2963**

M. used a catheter connected to a syringe containing sterile physiological saline. A sterile swab is tied to the distal end of the catheter, the swab is introduced into the cervix through a tubular speculum, the secretions being washed on to the swab by the injection of some of the saline through the catheter. The swab is removed within the speculum and then dropped into a sterile tube, for subsequent examination for trichomonads and bacteria.

—I. W. Jennings.

See also absts. **2806** (isolation of *H. meleagridis*); **2938** (evaluation of semen).

MISCELLANEOUS

Hickman, J. (1953). **The use of film and intensifying screen combinations to reduce exposure time in equine radiology.**—*J.R. Army vet. Cps.* **24**, 44-49. [Abst. from author's summary.] **2964**

H. discussed the chief factors concerned in the operation of an X-ray unit, gave details of various types of films and intensifying screens, indicated methods of reducing exposure time by various films and intensifying screen combinations and gave details of satisfactory exposures for radiology of the navicular bone.

REPORTS

GREAT BRITAIN. (1953). **Report of the Ciba Foundation for the Promotion of International Co-operation in Medical and Chemical Research, 1952.** pp. 43. London: The Ciba Foundation. **2965**

This 4th Annual Report of the activities of the Ciba Foundation for the Promotion of International Co-operation in Medical and Chemical Research shows that a good deal has been done to achieve the objects for which it was founded.

Details are given of an exchange scheme for bursaries between the Institut National d'Hygiène in France and the Ciba Foundation.

Discussion meetings are held from time to time on special topical subjects; six such meetings were held during the year, one having dealt with " Education in Veterinary Science". Six Ciba Foundation Conferences were held, the subjects being respectively:—The spinal cord; Bioassay of anterior pituitary and adrenocortical hormones; Mammalian germ cells; Hormonal factors in carbohydrate metabolism; Synthesis and metabolism of adrenocortical steroids; and The chemical structure of proteins. The reports of these meetings have been or are in process of publication.

The Ciba Foundation is in close touch with many learned societies.

BOOK REVIEWS

COPE, V. Z. (1952). **What the general practitioner ought to know about human actinomycosis.** pp. xii+80. London: William Heinemann, Medical Books Ltd. 12s. 6d. **2966**

The author's earlier monograph on the subject [*V.B.* **8,** 552], written primarily for surgeons, has become a classic on the subject of human actinomycosis. In the preface of this new book, he says: " It is also important, however, that the present state of our knowledge of the disease should be known to every practitioner, and for this purpose, I have put the chief factors within small compass so that they may be easily comprehended ".

The first quarter of the book, dealing with the discovery of the organism, its nature and methods of infection is of as much interest to the veterinarian as to the medical worker. In the bulk of the remainder of the book, manifestations of actinomycosis in human beings and chemotherapy are discussed.

As a teacher, the author has given great attention to the focussing of the minds of his students on essential features. To this end, throughout the book, he has given convenient little paragraphs in rhyme. Throughout, there is evidence of the amount of thought put into the production of a monograph which is intended to be clearly understood by a wide range of readers.

POMMIER, G. (1952). Les maladies du mouton et de la chèvre. **[Diseases of sheep and goats.]** pp. 79. Paris: Vigot Frères. Fr. 480. **2967**

Intended primarily for the stock owner, this booklet lists 141 diseases of sheep and goats; it deals chiefly with symptoms and treatment. To facilitate diagnosis, the diseases are arranged under headings of the anatomical systems, with special sections for diseases of young stock and infectious diseases.

Parasitic diseases are on the whole satisfactorily discussed. Of the bacterial infections, those due to *Corynebacterium ovis* occupy the greatest space. Suppurative mastitis due to *C. pyogenes* is omitted, although staphylococcal mastitis is described, also a subacute mastitis occurring in the north of France and caued by *Pasteurella septica*. The public health aspect of brucellosis is properly emphasized, as is the importance of the notifiable diseases, psoroptic mange, anthrax, goat pox and sheep pox. Metabolic and deficiency diseases receive scanty treatment, however, and pregnancy toxaemia is stated to be identical with enterotoxaemia in regard to symptoms and treatment.

A great variety of trivial conditions is included, and simple remedies suggested. Unfortunately, the author usually gives an extended list of possible treatments, with no indication of which is most likely to prove effective.

—J. E. SMITH.

WHATMOUGH, W. A. [Compiled and co-ordinated by.] (1953). **The Chemist and Druggist poisons guide. An encyclopaedia of poisons law. Vol. II. Poisons provisions and explanations.** pp. ix+235. London: Chemist and Druggist. 40s. **2968**

Volume II, a companion to Volume I [*V.B.* **21,** 3777] explains in detail the application of poisons provisions of Acts, Rules and Regulations in poisons law requirements, any doubt as to the authenticity of any requirement

being resolved by direct reference to the statutory provision. Compiled to provide a safe-conduct through the hazards of poisons law provisions these two volumes are invaluable to the manufacturer, wholesaler, hospital pharmacist and retail chemist in dealing with labelling and supply problems. Volume II comprises:—Section I dealing with 16 classes of poisons; Section II Dangerous Drugs Control, Authorisations and Records; Section III Dangerous Drugs Ordinances; and Section IV reviews one hundred years of poisons law concluding with a Tabulated Poisons List and a Glossary. There is an index. Clearly printed and illustrated with diagrams, specimen labels, copies of entries of sales in poisons and dangerous drugs registers, the book is strongly bound in a serviceable cover.—E. MARSH JONES.

ANON. (1953). **British pharmacopoeia 1953.** pp. xxiv + 894. London: The Pharmaceutical Press. 50s. 2969

The General Medical Council appointed a new Commission to prepare the next edition to be issued in 1953, at the time of publication of the seventh British Pharmacopoeia in 1948 and to keep the current Pharmacopoeia in alignment with advances in therapeutics an Addendum was published in 1951. This eighth edition is to have effect from the 1st September 1953 and the amended statutory provisions of the Medical Act 1950, Section 23 are indicated. In deciding on the scope of the new edition, the practice of medicine and pharmaceutics in the United Kingdom, in the British Commonwealth, and in the Colonies was considered; listed professional and other bodies were consulted. The rapid developments in medical and in chemical and biological methods, and of the precise methods of control to ensure the purity of drugs, rendered the preparation however, a complex and laborious task.

The most outstanding change is the use of English instead of Latin in the main titles of the monographs. Latin titles of those monographs retained from the B.P., 1948, are usually given as subsidiary titles where they differ from the English titles. There are 63 additional monographs and 150 have been deleted. The chemical nomenclature has been amended in accordance with current practice, and an attempt has been made to standardize analytical procedures. Biological products now included are B.C.G. Vaccine, Scarlet Fever Antitoxin, Scarlet Fever Prophylactic, Dick Control, and Dick Test Toxin and in Appendix XV there is a section on the biometrical principles of assay with descriptions of the various designs of assay recommended for substances in the Pharmacopoeia.—E. MARSH JONES.

YOFFEY, J. M. [Edited by.] (1953). **The suprarenal cortex. Proceedings of the Fifth Symposium of the Colston Research Society held in the University of Bristol April 1st-4th, 1952.** pp. viii + 232. London: Butterworths Scientific Publications. 42s. 2970

This volume contains the reports of 20 papers on steroid hormones including the related substance adrenocorticotropic hormone (A.C.T.H.) and with the literature cited presents a wide view of recent studies on substances which exert such powerful and widespread effects on almost every part of the body and influence many of its most important mechanisms. Subjects for discussion include:—Some aspects of the preparation and properties of adrenocorticotropic hormone, C. H. Li; The suprarenal cortex: The structural background, J. M. Yoffey; The adrenal cortex and the mammary gland, S. J. Folley; A survey of tissue responses to A.C.T.H. and cortisone, G. R. Cameron; The influence of the suprarenal cortex on mineral and water metabolism, H. Heller; and Clinical responses as illustrated by treatment of the rheumatic diseases, G. D. Kersley. —E. MARSH JONES.

MACGREGOR, R. (1952). **The structure of the meat animals. A guide to their anatomy and physiology.** pp. 238. London: The Technical Press Ltd. 20s. 2971

This book primarily intended as a textbook for sanitary inspectors, meat inspectors and butchers, goes much further than its title would suggest. In fact, in some respects matters are dealt with which hardly come under their purview, for it includes the physiology of many of the organs described and other only more or less relevant material. Doubtless the author considers that the student can the better appreciate the structure and position of an organ if at the same time he understands something about its functions.

All the usual meat-producing animals are included, as also are the camel and deer and to a certain extent the whale, the dog and even the cat, the last three as far as is necessary to recognize the flesh of these animals as possible substitutes.

The twelve chapters of which the book is composed include chapters on digestion, reproduction, the anatomy of the fowl and one on *post-mortem* changes. There are also three appendixes—one on the lymph nodes, another on hormones, endocrine glands and enzymes and

finally one on substitution and the differentiation of such falsifications.

The book is written in a very readable style calculated to increase the reader's interest in the subject and a useful addition is the inclusion of 94 figures illustrating many of the body organs and fifteen full-page plates, excellently reproduced.

It is unfortunate, however, that when the author has evidently taken so much trouble in the preparation and " layout " of his subject, many mis-statements of facts have been allowed to creep in. A few of these may be quoted as an example:—on page 2 when discussing the foetal calf of about 3 inches in length, he says: " All the internal organs are colourless masses of a gelatinous material with trabeculae of connective tissue running throughout them. Thus it may be deduced that the parenchyma of every organ arises from or is created by the connective tissues ".

Again, on page 3, the author states that " running through the trabeculae, these capillary vessels carry lymph and blood throughout the whole organ and thereby nourish it. Connective tissue may therefore be said to nourish the whole organ ".

In describing synovia of joints on page 13, we read, " In a healthy young animal, this synovia is sufficiently copious to keep the ends of the bones an inch or so apart and so there is no detectable friction when they move. In a starved or very aged animal the synovia is less and the ends of the bones may actually be in contact ". On the question of reproduction, when defining the term " embryo ", on page 182, we notice " The embryos continue to grow rapidly, and finally one of them, presumably the strongest, smothers the others, but continues its growth until it has lined the whole uterus . . ".

In the chapter dealing with twins and triplets, page 188, the author is rather shaky, for he asserts " Non-identical twins or triplets, etc., are produced when two or more embryos of approximately the same strength develop instead of one smothering the other ".

On page 206: " In a laying hen, the whole Graafian follicle breaks away from the ovary without bursting, travels down the oviduct with the ovum inside it, and becomes an egg. It takes about ten days to reach the cloaca, and acquires, en route, a quanity of yolk and a thick layer of albumen, which swell it out, after which the shell, or hard chalky covering, is added a few hours before laying. In a bird in lay, fresh follicles are formed every other day or even every day, and the oviduct therefore contains eggs in all stages of development from the size of a millet seed to a fully formed egg ".

The above examples show some of the weaknesses of the book, which it is to be hoped will be remedied in a second edition.

—D. S. Rabagliati.

Wundram, G. & Schönberg, F. (1953). Tierärztliche Lebensmittelüberwachung. Ein Praktikum. **[Veterinary food inspection.]** pp. 412. Berlin & Hamburg: Paul Parey. 6th Revised Edit. DM 43. 2972

This book, now in its sixth edition, is concerned with the inspection of foods of animal origin (excepting milk and milk products) at the time of their sale. In the section devoted to meat, the recognition of *post-mortem* changes and the arthropods which invade meat (fly larvae, beetles, mites) are described. Meat inspection itself is not included, since this subject was exhaustively covered by Schönberg and Zietzschmann (1951) [see *V.B.* **22**, 1237]. Bacterial food poisoning is dealt with. A short chapter lists the whales which are caught for food and describes the characteristics of whale meat.

Nearly one third of the book is devoted to fish and crustaceans. Anatomy, recognition, *post mortem* changes and definitions and names of fish and fish products as sold are given. The determination of the age of carcasses of chickens, ducks, and pigeons, and their more important diseases and parasites, are dealt with.

An interesting chapter deals with the legal definition of freshness in eggs and with the theory underlying the various methods of egg preservation.

Public anxiety at the frequency of poisoning caused by infected duck eggs has led to the development of a strict veterinary supervision of producers: legislation now ensures that only eggs bearing an official stencil mark guaranteeing freshness are allowed to be retailed.

Determination of age, flesh quality and suitability as food, and the main diseases encountered, in each of the following game animals and birds are described:—wild boar, roe deer, red deer, fallow deer, sikas (China and Manchurian deer), elk, reindeer, chamois, mouflon (wild sheep), rabbit and hare, otter, badger, nutria and 40 game birds.

A chapter new to this edition briefly describes the occurrence of vitamins in foods of animal origin. A list of references to the relevant literature is given at the end of each chapter. The legislation concerning food inspection in both East and West Germany is reproduced in an appendix.—R.M.

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List of Abbreviations

A.I. — artificial insemination
ant. — anterior
A.P.F. — animal protein factor
approx. — approximately
aq. — aqueous
av. — average

B.A.L. — British anti Lewisite (2,3 dimercaptopropanol)
b.p. — boiling point

c.f. — complement fixation
clin. — clinical
coeff. — coefficient
conc. — concentration
c.s.f. — cerebrospinal fluid

diam. — diameter
dil. — dilute(d)

E.I.A. — equine infectious anaemia
equiv. — equivalent

ft. — foot (feet) [measurement only]

Hb. — haemoglobin
H.I. — haemagglutination inhibition

inj. — injection(s)
insol. — insoluble
Inst. (inst) — Institute
i/m — intramuscular(ly)
i/p — intraperitoneal(ly)
i/v — intravenous(ly)
i/d — intradermal(ly)

lab. — laboratory (-ories)

max. — maximum (-al)

N.D.V. — Newcastle disease virus
N.D. — Newcastle disease

r.b.c. — red blood corpuscles
r.e.s. — reticuloendothelial system
R.H. — relative humidity

s/c — subcutaneous(ly)
soln. — solution
suppl. — supplement(s) (-ary)
std. — standard

temp. — temperature
therap. — therapeutic

U.V. — ultra-violet

vet. — veterinary
vol. — volume

w.b.c. — white blood corpuscles
wt. — weight

/ — per (*e.g.* wt./vol mg./lb. body wt.)

Bulletins on disease subjects written for farmers and "popular" articles of a similar nature are not included in the *Veterinary Bulletin*. Those of a sufficiently important nature are, however, included in *Index Veterinarius*; so also are certain review articles, presidential addresses, congress proceedings, etc., where the title conveys as much information as could be given in an abstract of a few lines. For information of this nature, readers of the *Veterinary Bulletin* are referred to *Index Veterinarius*, where titles of all publications indexed by the bureau are fully cross-referenced.

A list of annotations and reviews, classified according to subject, is now given in *Index Veterinarius*, being inserted at the end of each number. Such papers will not necessarily be dealt with in the *Veterinary Bulletin*.

The Editor will be glad to receive publications relating to Veterinary Science and cognate subjects in order that they may be dealt with in the *Veterinary Bulletin*.

Reports of Departments, Special Reports, reprints, etc., etc., should be sent as soon as they are issued.

Books for Review.

The Editor will be glad to receive books for review in the *Veterinary Bulletin*.